

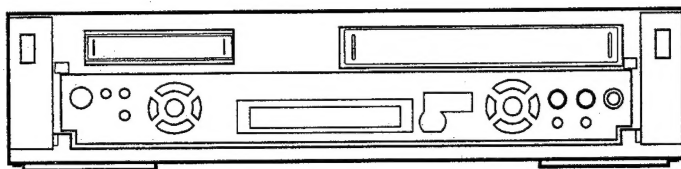
# **GoldStar**

## **DOUBLE DECK VIDEO CASSETTE RECORDER SERVICE MANUAL**

**MODEL: QUISY 900**

**CAUTION**

BEFORE SERVICING THE UNIT, READ THE "SAFETY PRECAUTIONS"  
IN THIS MANUAL.

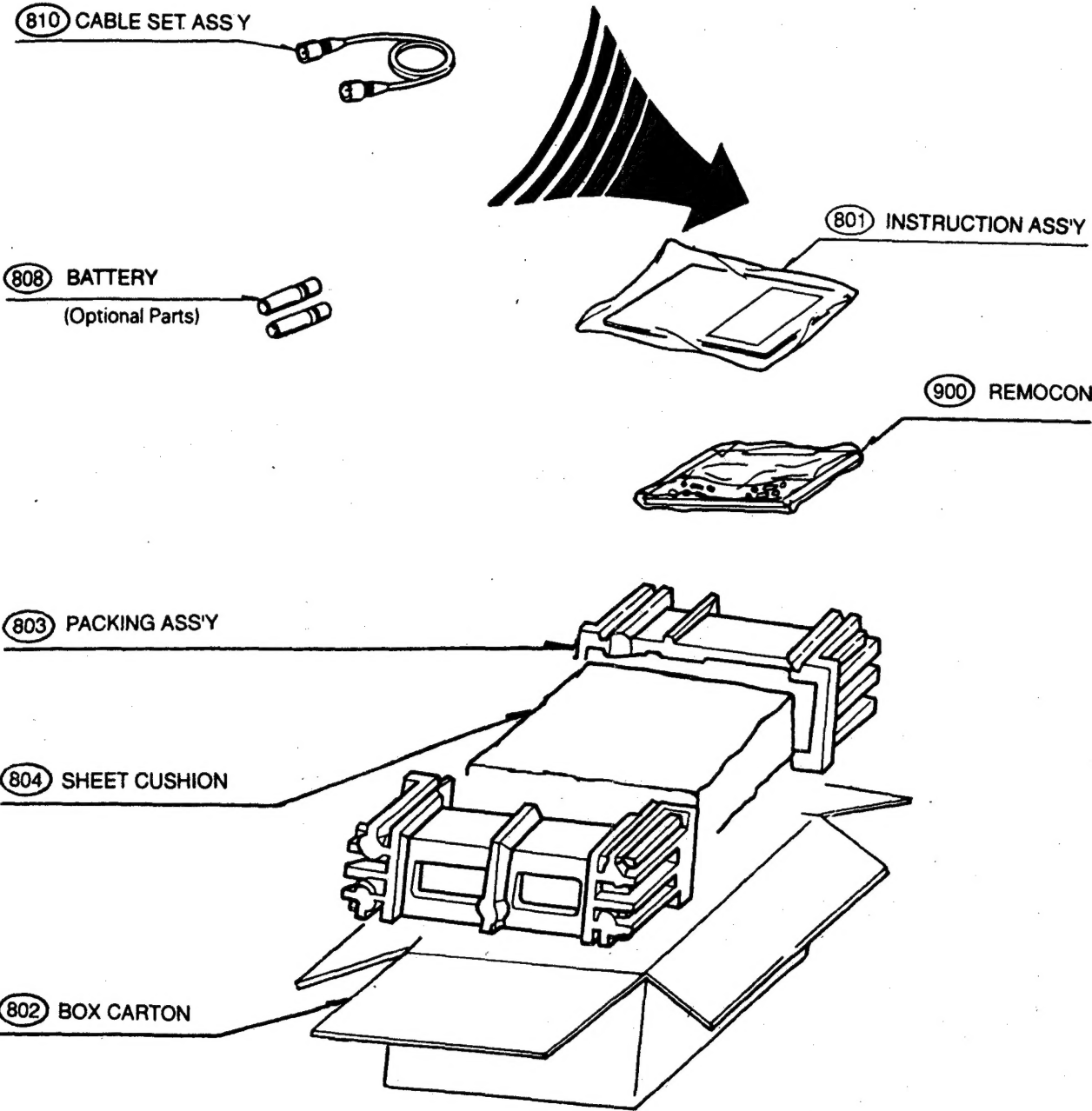


### 1. Cabinet & Main Frame Section





2. Packing Accessory Section

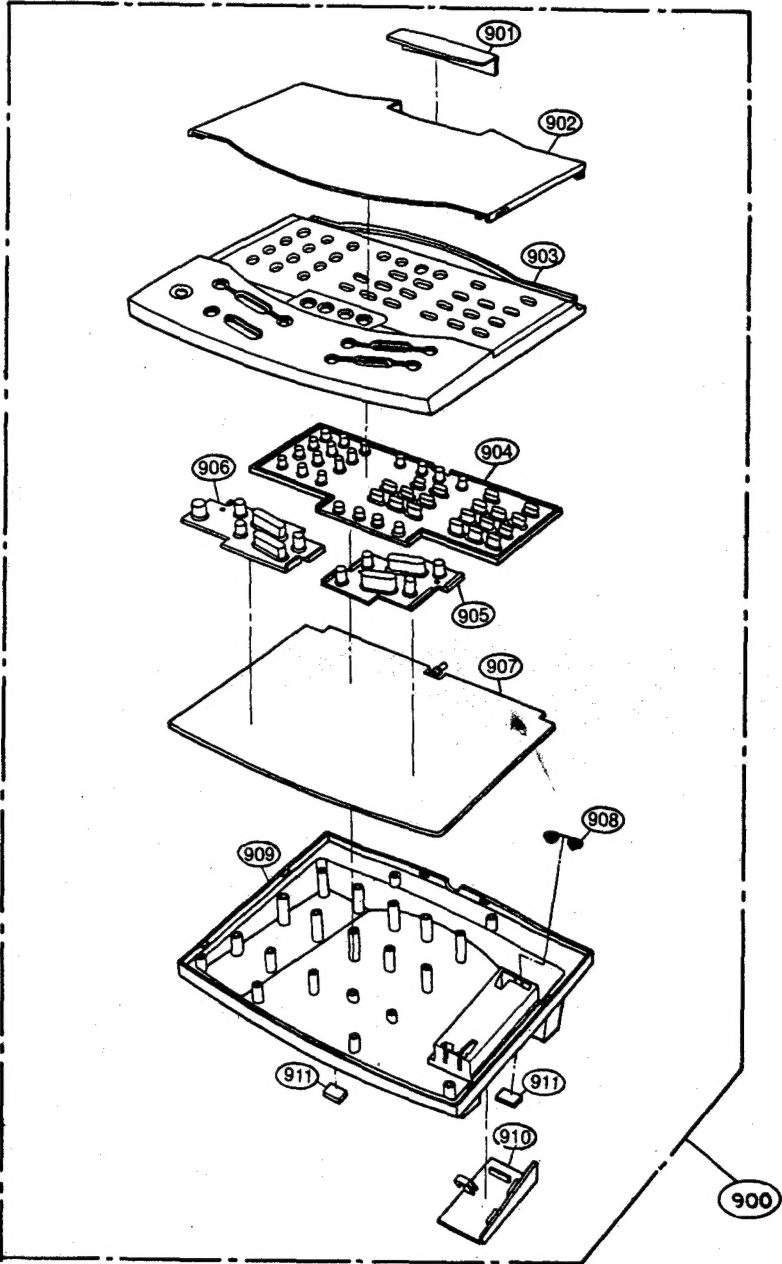


• Replacement Parts List

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		801	480-657G	INSTRUCTION ASSY	AAAM(R03) 1.5V 1PAIR(LOCAL) RF-CABLE ASSY PAL FTZ	NSP
		802	290-452A	BOX CARTON		
		803	283-217A	PACKING		
		804	291-002D	SHEET CUSHION		
		808	534-008C	BATTERY		
		810	861-505J	CABLE SET ASSY		

RUN DATE : 95.09.26  
NSP: Not Service Part

3. Remote Control Section



• Replacement Parts List

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		900	597-121F	REMOTE CONTROL	2ND D/DECK ASSY	
		901	236-558A	WINDOW	FILTER(2ND D/D)	NSP
		902	220-084B	COVER	D/D3 R/C	NSP
		903	217-485H	CASE	TOP	NSP
		904	275-699B	BUTTON	D/D2 R/C	NSP
		905	275-612A	BUTTON	RUBBER VHS (R/C)	NSP
		906	275-611A	BUTTON	RUBBER 8MM (R/C)	NSP
		907	515-824E	PWB ASSY!	REMOCON (2ND DOUBLE DECK)	NSP
		908	442-611A	SPRING	COIL (R/C)	NSP
		909	217-486D	CASE	BOTTOM	NSP
		910	221-857D	COVER	BATTERY	
		911	477-054A	RUBBER	BUMPON	NSP

RUN DATE : 95.09.26  
NSP: Not Service Part

# TABLE OF CONTENTS

## SECTION 1

## SUMMARY

KEY TO ABBREVIATIONS .....	1-4
IMPORTANT SAFETY PRECAUTIONS .....	1-5
• Precautions during Servicing .....	1-5
SAFETY CHECK AFTER SERVICING .....	1-6
• Insulation resistance test .....	1-6
• Dielectric strength test .....	1-6
• Clearance distance .....	1-6
• Leakage current test .....	1-6
INTRODUCTION .....	1-7
FEATURES .....	1-7
SPECIFICATIONS .....	1-7
LOCATION OF CUSTOMER CONTROLS .....	1-8

## SECTION 2

## CABINET & MAIN FRAME

SERVICE FIXTURE CONNECTING METHOD .....	2-1
1. SVC FIXTURE Connecting Method .....	2-1
2. Electrical Service Fixture List .....	2-1
CABINET DISASSEMBLY .....	2-2
1. Top Case .....	2-2
2. Bottom Cover .....	2-2
3. Front Panel .....	2-2
CIRCUIT BOARD DISASSEMBLY .....	2-3
1. Circuit Board Arrangement .....	2-3
2. VHS Main Circuit Board .....	2-3
3. Power Circuit Board .....	2-3
4. 8mm Main Circuit Board .....	2-3
5. 8mm/VHS Pre-Amp Circuit Board .....	2-4
6. 8mm/VHS Key Function Circuit Board .....	2-4
EXPLODED VIEWS .....	2-5
1. Cabinet & Main Frame Section .....	2-5
2. Packing Accessory Section .....	2-7
3. Remote Control Section .....	2-8

## SECTION 3

## ELECTRICAL

ELECTRICAL ADJUSTMENT PROCEDURES .....	3-1
• Electronic Test Equipment Requirement .....	3-1
1. VHS Circuit Adjustment .....	3-1
1-1. Servo Circuit .....	3-1
1-1-1. PG Adjustment .....	3-1
1-2. Audio Circuit .....	3-2
1-2-1. Record Bias Adjustment .....	3-2

1-2-2. VCO (Record Current Frequency) Adjustment .....	3-2
1-3. Tuner/IF Circuit .....	3-2
1-3-1. AFC Adjustment .....	3-2
1-3-2. RF AGC Adjustment .....	3-3
1-3-3. SIF Adjustment .....	3-3
2. 8mm Circuit Adjustment .....	3-4
2-1. Servo Circuit .....	3-4
2-1-1. PG Adjustment .....	3-4
2-2. Y/C Circuit .....	3-4
2-2-1. Playback Output Level Adjustment .....	3-4
2-2-2. Color VCO Adjustment .....	3-4
2-3. Audio Circuit .....	3-5
2-3-1. VCO Adjustment .....	3-5
2-3-2. Deviation (L) Adjustment .....	3-5
2-3-3. Deviation (R) and Matrix Adjustment .....	3-5
BLOCK DIAGRAMS .....	3-7
1. VHS Block Diagrams .....	3-7
1-1. Power Block Diagram .....	3-7
1-2. Pre-Amp Block Diagram .....	3-9
1-3. Main System (Servo, Syscon) Block Diagram .....	3-11
1-4. Y/C Block Diagram .....	3-14
1-5. Audio Block Diagram .....	3-17
1-6. Timer Block Diagram .....	3-19
1-7. Tuner/IF Block Diagram .....	3-21
1-8. In/Out & Function OSD Block Diagram .....	3-23
2. 8mm Block Diagrams .....	3-25
2-1. Main System (Servo, Syscon) Block Diagram .....	3-25
2-2. Audio Block Diagram .....	3-28
2-3. Pre-Amp Block Diagram .....	3-28
2-4. Y/C Block Diagram .....	3-30
CIRCUIT DIAGRAMS .....	3-31
1. VHS Circuit Diagrams .....	3-31
1-1. Power Circuit Diagram .....	3-31
1-2. Main System (Servo, Syscon) Circuit Diagram .....	3-35
1-3. Y/C Circuit Diagram .....	3-39
1-4. Timer/Key Function Circuit Diagram .....	3-45
1-5. Audio Circuit Diagram .....	3-47
1-6. Tuner/IF Circuit Diagram .....	3-51
1-7. Scart In/Out & Function OSD Circuit Diagram .....	3-55
1-8. Pre-Amp Circuit Diagram .....	3-59
2. 8mm Circuit Diagrams .....	3-65
2-1. Main System (Servo, Syscon) Circuit Diagram .....	3-65

2-2. Y/C Circuit Diagram .....	3-69
2-3. Audio Circuit Diagram .....	3-75
2-4. Pre-Amp Circuit Diagram .....	3-79
3. Connection Diagram .....	3-81
<b>PRINTED CIRCUIT BOARD DIAGRAMS .....</b>	<b>3-83</b>
1. VHS Printed Circuit Board .....	3-83
1-1. Main P.C.Board .....	3-83
1-2. Power P.C.Board .....	3-87
1-3. Pre-Amp P.C.Board .....	3-88
1-4. Timer ( I ) P.C.Board .....	3-87
1-5. Deck Junction P.C.Board .....	3-89
1-6. Scart In/Out P.C.Board .....	3-89
2. 8mm Printed Circuit Board .....	3-91
2-1. Main P.C.Board .....	3-91
2-2. Timer ( II ) P.C.Board .....	3-92
2-3. Pre-Amp P.C.Board .....	3-93
2-4. Deck Junction P.C.Board .....	3-95

## SECTION 4 MECHANISM

### SECTION 4-1 VHS DECK MECHANISM

#### FRONT LOADING MECHANISM DISASSEMBLY

• Front Loading Mechanism Parts Location .....	4-3
1. Front Loading Mechanism Assembly .....	4-4
2. PCB Assembly .....	4-5
2-1. PCB Assembly (R) .....	4-5
2-2. PCB Assembly (L) .....	4-5
3. Top Plate .....	4-5
4. Carrier Bracket Assembly .....	4-6
4-1. Carrier Bracket Assembly .....	4-6
4-2. Cassette Opener .....	4-6
4-3. Rid Opener .....	4-6
4-4. Detect Lever and Detect Spring .....	4-6
4-5. Support Bracket Assembly .....	4-7
4-6. Carrier Bracket Assembly .....	4-7
5. Cassette Guide .....	4-7
6. Bracket Assembly Side .....	4-8
7. Bracket Assembly (L), (R) .....	4-8
8. Door Opener .....	4-8
9. Drive Gear Assembly .....	4-8
9-1. Drive Gear Assembly .....	4-8
9-2. Cushion Spring .....	4-8
9-3. Cap-D .....	4-8
9-4. Spring C.C .....	4-8
9-5. Gear C .....	4-8
9-6. Gear R .....	4-9
9-7. Spring R .....	4-9

9-8. Gear L .....	4-9
9-9. Spring L .....	4-9
9-10. Switch Lever .....	4-9

#### DECK MECHANISM DISASSEMBLY

• Deck Mechanism Parts Location .....	4-10
1. Auto Head Cleaner Assembly .....	4-11
2. Drum and Drum Base Assembly .....	4-11
3. Drum Assembly .....	4-11
3-1. Drum Sub and Motor Assembly .....	4-11
3-2. Upper and Lower Drum Assembly .....	4-12
4. A/C Head Assembly .....	4-12
5. Pinch Lever Assembly .....	4-12
6. Loading Motor Assembly .....	4-13
7. Take Up Lever .....	4-13
8. Take Up Arm Assembly .....	4-13
9. P4 Assembly .....	4-14
10. Pinch Gear .....	4-14
11. Full Erase Head Assembly .....	4-14
12. P1 Assembly .....	4-15
13. Tension Arm Assembly .....	4-15
14. Supply Soft, Supply Main, Take Up Soft and Take Up Main Brake Assembly .....	4-15
15. Bracket F/R Assembly .....	4-15
16. Supply Reel Assembly .....	4-16
17. Take Up Reel Assembly .....	4-16
18. Idler Gear (A), (B) .....	4-16
19. Pulley Gear Assembly .....	4-16
20. Bracket Bottom Assembly .....	4-16
21. Junction PCB Assembly .....	4-16
22. Capstan Motor/Brake Assembly .....	4-17
23. Function Plate .....	4-17
24. Ratchet Lever Assembly .....	4-18
25. Cam Gear, Rack T, Rack F.L .....	4-18
26. PC Gear .....	4-19
27. P2 and P3 Slant Assembly .....	4-19
28. Loading Gear Assembly .....	4-19
29. Tension Lever Assembly .....	4-20
30. Clutch Gear Assembly .....	4-20

#### MECHANISM ADJUSTMENT

• Tools and Fixtures for Deck .....	4-21
1. Mechanism State Switch (Mode Switch) Check .....	4-22
2. Preparation for Adjustment (To set VCR to the Loading State without inserting a cassette) ..	4-23
3. Tension post position and Tension Adjustment .....	4-24
4. Checking Torque .....	4-25
5. Guide Roller Height Adjustment .....	4-27

6. Audio/Control (A/C) Head Adjustment .....	4-29
7. X-Value Adjustment.....	4-30
8. Adjustment after Replacing Drum Assembly (Video Heads) .....	4-31
9. Check of Tape Travel after Reassembling Deck Assembly .....	4-30
9-1. Check Audio and RF Locking Time during Playback after CUE or REV .....	4-30
9-2. Check the coincidence of both Audio and Video Sync. (Lip sync.) .....	4-31
9-3. Check the occurrence of tape curl and Jame..	4-31
9-4. Check the adjustment state of Take-Up Guide .....	4-31
10. Maintenance/Inspection Procedure .....	4-32

#### **MECHANISM TROUBLESHOOTING GUIDE**

1. Deck Mechanism .....	4-35
2. Front Loading Mechanism .....	4-39

#### **EXPLODED VIEWS**

1. Moving Mechanism Section ( I ) .....	4-41
2. Moving Mechanism Section ( II ) .....	4-43
3. Front Loading Mechanism Section .....	4-45

## **SECTION 4-2**

### **8mm DECK MECHANISM**

<b>Periodical Check and Maintenance .....</b>	<b>4-47</b>
---	-------------

1. Rotary Drum Assembly Cleaning.....	4-47
2. Tape Loading Course Cleaning.....	4-47
3. Drive System Cleaning .....	4-47
4. Maintenance Time Table .....	4-48

<b>Deck Mechanism Disassembly .....</b>	<b>4-49</b>
---	-------------

1. Housing Ass'y Disassembly .....	4-49
2. DC Motor (Capstan motor) Ass'y .....	4-49
3. Pinch Arm Ass'y and Pinch Lever Ass'y .....	4-50
4. Take up Arm Ass'y .....	4-51
5. Mode Lever Ass'y and Take up Lever Ass'y .....	4-52
6. Soft Brake Ass'y and T/Band Protect.....	4-52
7. Tension Regulator Ass'y and Slant Roller Arm Ass'y .....	4-53
8. Tension Regulator FWD Position and Back Tension Adjustments .....	4-54
9. Worm Gear Ass'y Middle Gear, Trains Gear Ass'y, Loading Motor Ass'y and Bracket Ass'y .....	4-55
10. Loading Base Ass'y, Mode Gear Ass'y and Eject Lever Ass'y.....	4-56
11. Gear Loading Ass'y (S), (T), Slant Base Ass'y (S), (T), Cam Gear and Lever Drive Ass'y.....	4-58

12. Drum Base Ass'y and Interia Roller Ass'y .....	4-60
13. Brake Clutch, Reel Ass'y (S), Reel Ass'y (T), Sensor Bracket, Idler Gear Ass'y and Cam Spacer.....	4-62
14. Brake Reel Ass'y, Lever Brake Ass'y, Timing Belt, Idler Belt, Drive Gear Ass'y, Conversion Gear Ass'y .....	4-63
15. Drum Ass'y Disassembly .....	4-63
16. Drum Disassembly .....	4-64
17. PCB Ass'y Deck .....	4-65

#### **Deck Mechanism Adjustment .....**

1. Deck Loading System Lay-Out .....	4-66
2. Preparations.....	4-66
3. Loading Post First Height Adjustment.....	4-66
4. Tension Arm Position and Back Tension Adjustment .....	4-66
5. Reel Torque Check .....	4-67
6. Tape Path Adjustment.....	4-68

#### **Exploded Views.....**

1. Cassette Housing Section.....	4-71
2. Chassis Mechanism Section.....	4-73

## **SECTION 5**

### **REPLACEMENT PARTS LIST**

1. Mechanical Section.....	5-1
1-1. VHS Mechanism .....	5-1
1-2. 8mm Mechanism.....	5-5
2. Cabinet & Main frame Section .....	5-7
3. Packing Accessory Section.....	5-8
4. Remote Control Section .....	5-8
5. Fixture Section .....	5-8
6. Electrical Section .....	5-9



# SECTION 1 SUMMARY

## KEY TO ABBREVIATIONS

A	AC	:Alternating Current	M	LPF	:Low Pass Filter
	ACC	:Automatic Color Control		MAX	:Maximum
	ACSS	:Automatic Channel Setting System		MD	:Modulator
	ADJ	:Adjust		MECHA.CTL	:Mechanism Control
	A/E	:Audio Erase		MIC	:Microphone
	AFC	:Automatic Frequency Control		MIN	:Minimum
	AFT	:Automatic Fine Tuning		MIX	:Mixer, Mixing
	AGC	:Automatic Gain Control		M.M.	:Mono Multi Vibrator
	A.H.SW	:Audio Head Switch		MMV	:Monostable Multivibrator
	ALC	:Automatic Level Control		MOD	:Modulation, Modulator
	AM	:Amplitude Modulation		MODEN	:Modulation-Demodulator
	AMP	:Amplifier		MPX	:Multiplex
	ANT	:Antenna	N	NR	:Noise Reduction
	APC	:Automatic Phase Control	O	OSC	:Oscillator
	ASS'Y	:Assembly		OSD	:On Screen Display
	AUX	:Auxiliary	P	PB	:Playback
B	B	:Base		PCB	:Printed Circuit Board
	BGP	:Burst Gate Pulse		P.CTL	:Power Control
	BPF	:Bandpass Filter		PER-AMP	:Preamplifier
	BS	:Broadcasting Satellite		P.F	:Power Failure
	BW or B/W	:Black and White		PG	:Pulse Generator
C	C	:Capacitor, Chroma, Collector		PLL	:Phase Locked Loop
	CAN	:Cancel		PREM.DET	:Premire Detect
	CAP	:Capstan		P-P	:Peak to Peak
	CAP.BRK	:Capstan Brake		PS	:Phase Shift
	CAP.RVS	:Capstan Reverse		PWM	:Pulse Width Modulation
	CATV	:Cable Television		PWR CTL	:Power Control
	CBA	:Circuit Board Assembly	Q	Q	:Transistor
	CCD	:Charge Coupled Device		QH	:Quasi Horizontal
	C.CTL	:Chro Control, Capstan Control		QSR	:Quick Set Record
	CFG	:Capstan Frequency Generator		QTR	:Quick Timer Record
	CHROMA	:Chrominance		QV	:Quasi Vertical
	CNR	:Chroma Noise Reduction	R	R	:Resistor, Right
	COMB	:Combination		RE(or RC)	:Remocon, Receiver
	COMP	:Comb Filter		REC	:Recording
		:Comparator		REC S.'H'	:Record Start 'High'
		:Composite		REF	:Reference
		:Compensation		REG	:Regulated, Regulator
	CONV	:Converter		REMOCON	:Remote Control(unit)
	C.ROT SW	:Color Rotary Switch		RF	:Radio Frequency
	CS	:Chip Select		R/P	:Record/Playback
	C.SYNC	:Composite Synchronization		RTC	:Reel Time Counter
	CTL DIV	:Control Divide	S	S	:Serial
	CUR	:Current		S.ACCEL	:Slow Accel
	CYL	:Cylinder		SAOP	:Second Audio Program
D	D	:Drum, Digital, Diode, Drain		SC	:Scart, Simulcast
	D.ADJ	:Drum Adjust		S.DET	:Secam Detect
	DC	:Direct Current		SH	:Shift
	D.CTL	:Drum Control		SHARP	:Sharpness
	DEMODO	:Demodulator		SIF	:Sound Intermediate Frequency
	DET	:Detect		SLD	:Side Locking
	DEV	:Deviation		S/N	:Signal to Noise Ratio
	DHP	:Double High Pass		SP	:Standard Play
	DIGITRON	:Digital Display Tube		ST	:Stereo
	DL	:Delay Line		SUB	:Subtract, Subcarrier
	DOC	:Drop Out Compensator		SW or S/W	:Switch
	DUB	:Dubbing		SYNC	:Synchronization
	D.V SYNC	:Dummy Vertical Synchronization		SYSCON	:System Control
E	E	:Emitter	T	T	:Coil
	EE	:Electric to Electric		TP	:Test Point
	EMPH	:Emphasis		TR	:Transistor
	ENA	:Enable		TRK	:Tracking
	ENV	:Envelope		TRANS	:Transformer
	EP	:Extended Play		TU	:Tuner, Take-Up
	EQ	:Equalizer	U	UHF	:Ultra High Frequency
	EXP	:Expander		UNREG	:Unregulated
F	F	:Fuse	V	V	:Volts, Vertical, Video
	FB	:Feed Back		VA	:Voltage Alive
	FBC	:Feed Back Clamp		VCO	:Voltage Controlled Oscillator
	FE	:Full Erase		VGC	:Voltage Gain Control
	FG	:Frequency Generator		VHF	:Very High Frequency
	FL	:Filter		V.H.SW	:Video Head Switch
	FM	:Frequency Modulation		VISS	:VHS Index Search System
	F/R	:Forward/Reverse		VPS	:Video Program System
	FS	:Frequency Synthesizer		VR	:Variable Resistor or Volume
	FSC	:Subcarrier Frequency		V-SYNC	:Vertical Synchronization
	F/V	:Frequency Voltage		VTG	:Voltage
G	GEN	:Generator		VV	:Video to Video
H	H	:High, Horizontal		VXO	:Voltage X-tal Oscillator
I	IC	:Integrated Circuit	W	W	:Watt
	IF	:Intermediate Frequency		WHT	:White
	INS	:Insert		W/O	:With Out
L	L	:Low, Left, Coil	X	X-TAL	:Crystal
	LD	:Loading	Y	Y/C	:Luminance/Chrominance
	LD VTG CTL	:Loading Voltage Control		YNR	:Luminance Noise Reduction
	LECHA	:Letter Character	Z	ZD	:Zener Diode
	LM	:Level Meter			
	LP	:Long Play			

# IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, the products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

## • Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the  $\Delta$  symbol and shaded (■) parts are critical for safety.

Replace only with specified part numbers.

Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Use Specified internal wiring. Note especially:

- 1) Wires covered with PVC tubing
- 2) Double insulated wires
- 3) High voltage leads

4. Use specified insulating materials for hazardous live parts. Note especially:

- 1) Insulation Tape
- 2) PVC tubing
- 3) Spacers
- 4) Insulation sheets for transistor

5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.(Fig. 1)

6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

7. Check that replaced wires do not contact sharp edged or pointed parts.

8. When a power cord has been replaced, check that 10-15Kg of force in any direction will not loosen it.(Fig. 2)

9. Also check areas surrounding repaired locations.

10. Products using cathode ray tubes (CRTs)

In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the parts specified. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

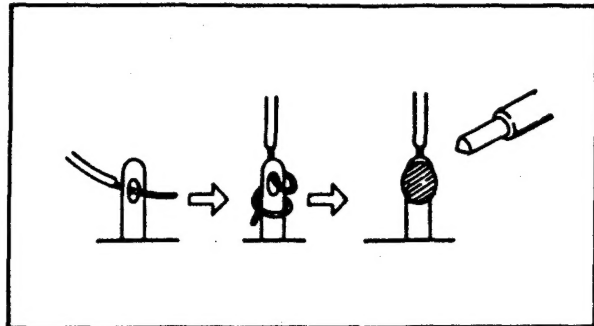


Fig. 1

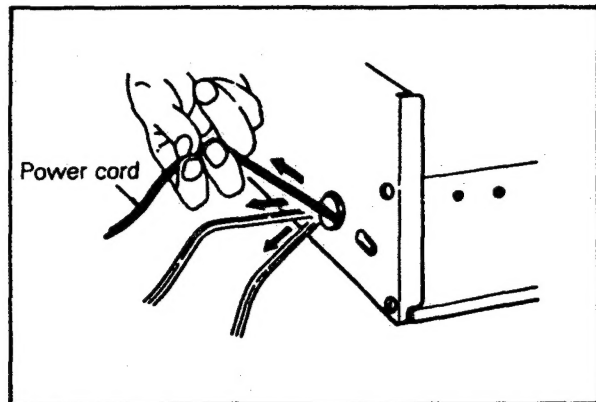


Fig. 2

# SAFETY CHECK AFTER SERVICING

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

## • Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

## • Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

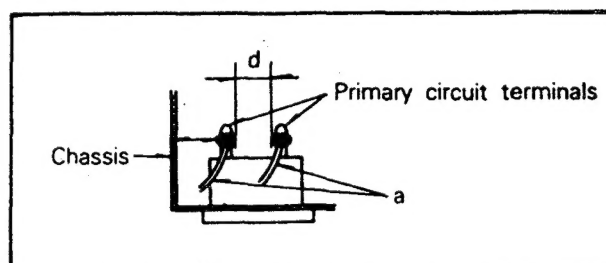


Fig. 3

## • Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

Table 1: Ratings for selected areas

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance(d),(d')
*110 to 130 V 200 to 240 V	Europe Australia	$\geq 10 \text{ M}\Omega/500 \text{ V DC}$	4kV 1 minute	$\geq 6\text{mm}(d)$ $\geq 8\text{mm}(d')$ (a Power cord)

\*Class II model only.

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

## • Leakage Current test

Confirm specified or lower leakage current between B(earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.)

Measuring Method: (Power ON)

Insert load Z between B(earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

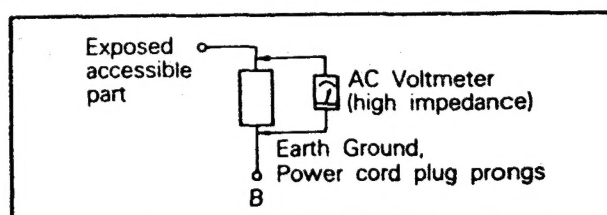


Fig. 4

Table 2: Leakage current ratings for selected areas

AC Line Voltage	Region	Load Z	Leakage Current(i)	Earth Ground (B) to:
100 to 130 V	Europe	$2\text{k}\Omega$	$i \leq 0.7\text{mA peak}$ $i \leq 2\text{mA dc}$	Antenna earth terminals
200 to 240 V	Australia	$50\text{k}\Omega$	$i \leq 0.7\text{mA peak}$ $i \leq 2\text{mA dc}$	Other terminals

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

# INTRODUCTION

This service manual provides a variety of service information. It contains the mechanical structure of the Double Deck Video Cassette Recorder together with mechanical adjustments and the electronic circuits in

schematic form. This Double Deck VCR was manufactured and assembled under our strict quality control standards and meets or exceeds industry specifications and standards.

## FEATURES

- the VHS and Hi 8mm system with HQ-picture technology for extraordinary picture sharpness and high resolution.
  - Hi-Fi stereo for excellent sound quality including a NICAM sound decoder.
  - the channels will be preset and memorized automatically.
  - automatic power and playback.
  - four VHS video heads for a clear still image and a variable slow motion.
  - three Hi 8mm video heads for Hi 8mm playback, standard 8mm playback also possible.
  - assemble editing from 8 mm tape to VHS tape.
  - the easy searching of your recordings by automatic and manual index marking, which can also be erased.
  - the blank search system for searching the unrecorded portion of the tapes.
  - the quick mechanism for fast tape function transitions.
  - the long play VHS recording and playback facility.
  - the real time tape counter and the VHS remaining tape time display.
  - eight programme timer, programmable up to one year in advance, can be set for daily or weekly recording.
  - the on-screen display of many functions e.g. the stored timer programmes.
  - and many more, like additional Euro-AV sockets, audio dubbing, child lock, immediate recording timer, and title generator.
  - built-in ShowView Programming : Optional Function ShowView is a trademark applied for by Gemstar Development Corp.
- ShowView system is manufactured under license from Gemstar Development Corporation.

## SPECIFICATIONS

### General

Power supply :	AC 230V ( $\pm 10\%$ ), 50Hz
Power consumption :	Approx. 35W
Cabinet size(W $\times$ H $\times$ D) :	430 $\times$ 99 $\times$ 390mm
Weight :	Approx. 8.2Kg
Operating temperature :	5° C to 35° C surrounding temperature
Operating humidity :	35-80%

### 8 mm Player section

Format :	8 mm PAL Standard
Heads :	3 video heads
Tape speed :	(SP) 20.05 mm/sec.
	(LP) 10.025 mm/sec.
Tape width :	8 mm
Video output :	1 Vpp 75 ohm unbalanced
Audio output :	0 dBm, less than 1 Kohm

### VHS Recorder section

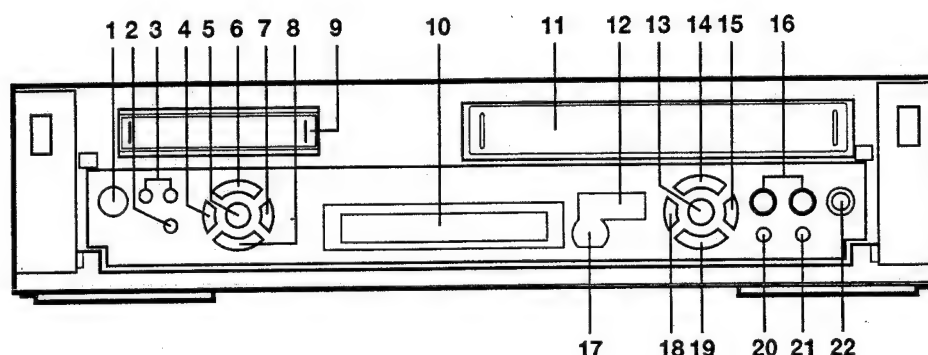
Format :	VHS PAL Standard
Heads :	4 video heads
Tape speed :	(SP) 23.39 mm/sec.
	(LP) 11.635 mm/sec.
Tape width :	12.7 mm
Video :	PAL B/G
Recording/playback time :	300 min. (LP : 600 min.) with E-300
Aerial input :	PAL : VHF 01-11 UHF 21-69 CATV S01-S41 HYPER 71-73
RF output :	UHF channels 32~40 (Variable)
Video input :	1 Vpp 75 ohm unbalanced
Video output :	1 Vpp 75 ohm unbalanced
S/N ratio (video) :	45dB nominal
Audio input :	0dBm, more than 50 Kohm
Audio output :	0dBm, less than 1 Kohm
Audio track :	Mono track & Hi-Fi tracks
S/N ratio (audio) :	NORMAL : >45dB/Hi-Fi : >68dB (JIS A FILTER)
Audio frequency range :	NORMAL : 100Hz-10kHz (-6/+3) Hi-Fi : 20Hz-20kHz
Audio dynamic range :	Hi-Fi Audio : >75dB (JIS A FILTER)

\* Designs and specifications are subject to change without notice.

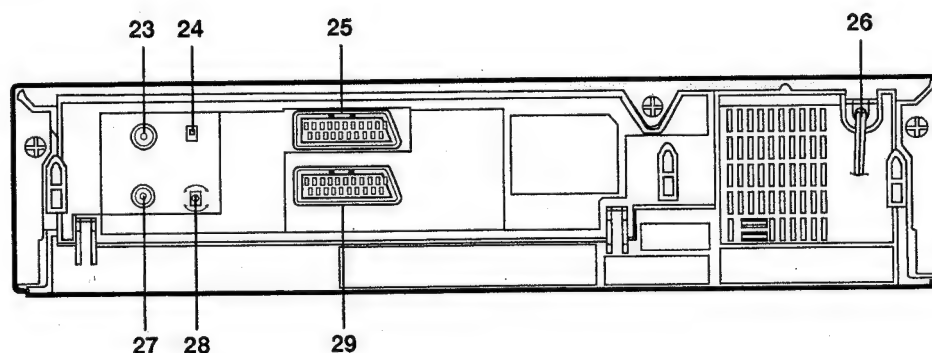


# LOCATION OF CUSTOMER CONTROLS

## FRONT



## REAR



1. OPERATE ON/OFF BUTTON
2. OTC BUTTON

3. PR/TRK (-/+) BUTTONS

### 8 mm Player section

4. REWIND/REVIEW BUTTON
5. STOP/EJECT BUTTON
6. PLAY BUTTON
7. FAST FORWARD/CUE BUTTON

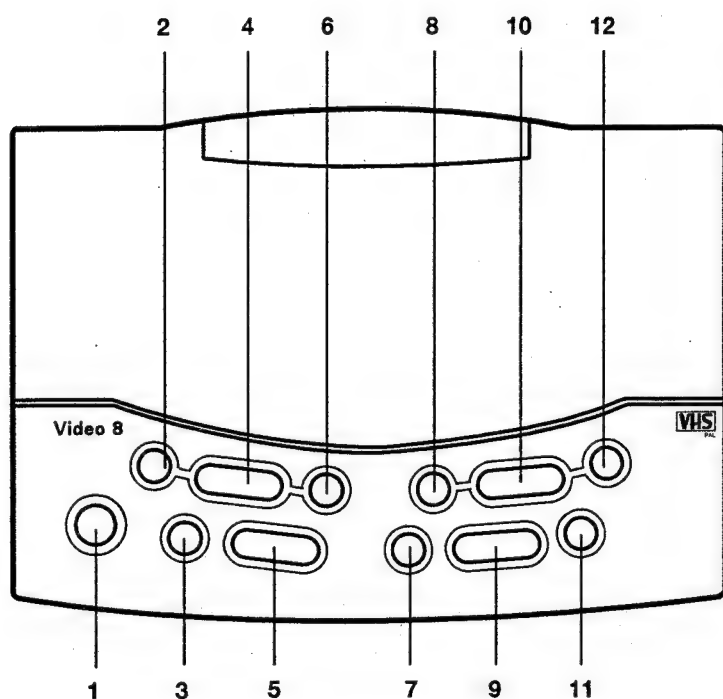
8. STILL BUTTON
9. CASSETTE COMPARTMENT
10. MULTI FUNCTION DISPLAY (8mm & VHS)

### VHS Recorder section

11. CASSETTE COMPARTMENT
12. AUDIO LEVEL METER
13. STOP/EJECT BUTTON
14. PLAY (x2) BUTTON
15. FAST FORWARD/CUE BUTTON
16. AUDIO RECORDING LEVEL CONTROLS (L/R)
17. REMOTE CONTROL SENSOR (8mm & VHS)
18. REWIND/REVIEW BUTTON
19. P/STILL BUTTON
20. RECORD BUTTON

21. AUDIO DUBBING BUTTON
22. MIC IN JACK
23. AERIAL INPUT SOCKET
24. TPSG ON/OFF SWITCH
25. EURO-AV 1 SOCKET
26. MAINS LEAD
27. RF OUTPUT
28. VIDEO CHANNEL CONTROL
29. EURO-AV 2 SOCKET

## REMOTE CONTROL



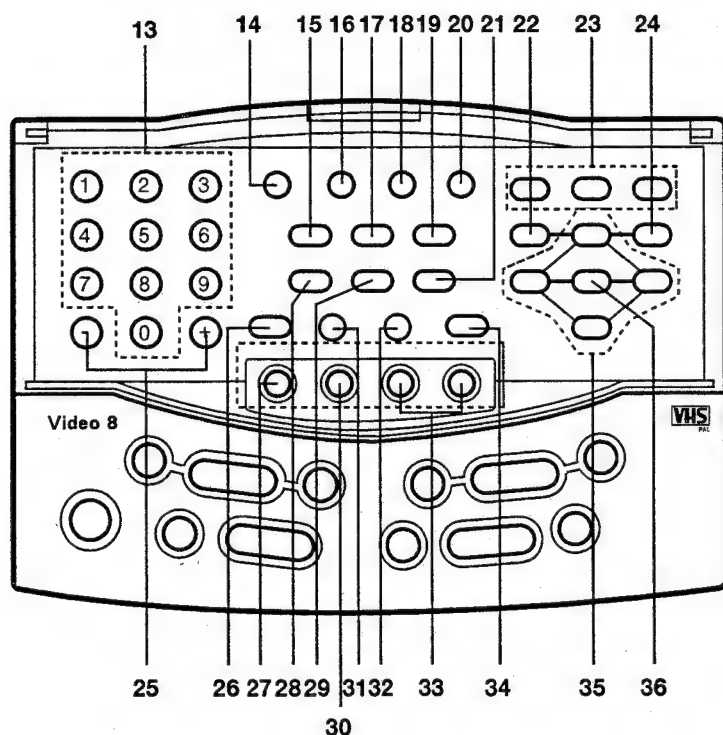
1. OPERATE ON/OFF BUTTON

### 8 mm Player section

- 2. REWIND/REVIEW BUTTON
- 3. STILL BUTTON
- 4. PLAY BUTTON
- 5. STOP BUTTON
- 6. FAST FORWARD/CUE BUTTON

### VHS Recorder section

- 7. P/STILL BUTTON
- 8. REWIND/REVIEW BUTTON
- 9. STOP BUTTON
- 10. PLAY (×2) BUTTON
- 11. FRAME ADVANCE BUTTON
- 12. FAST FORWARD/CUE BUTTON



- 13. NUMBER BUTTONS
  - 14. TAPE SPEED SELECT BUTTON (LP)
  - 15. MIC MIX BUTTON
  - 16. TV/VCR BUTTON : \*
  - 17. CHILD LOCK BUTTON
  - 18. MONITOR BUTTON
  - 19. TU/AV BUTTON
  - 20. SHOWVIEW BUTTON : \*
  - 21. REC/QSR BUTTON
  - 22. MENU BUTTON
  - 23. VISS BUTTONS
  - 24. CLEAR BUTTON
  - 25. PR/TRK (+/-) BUTTONS
  - 26. AUTO TRACKING BUTTON
  - 27. EDIT BUTTON
  - 28. B.SEARCH BUTTON
  - 29. AUDIO DUBBING BUTTON
  - 30. OTC BUTTON
  - 31. 8mm RESET BUTTON
  - 32. VHS RESET BUTTON
  - 33. SLOW BUTTONS
  - 34. RESET BUTTON
  - 35. CURSOR BUTTONS
  - 36. OK BUTTON
- ※ \* : Optional Function

# SECTION 2 CABINET & MAIN FRAME

## SERVICE FIXTURE CONNECTING METHOD

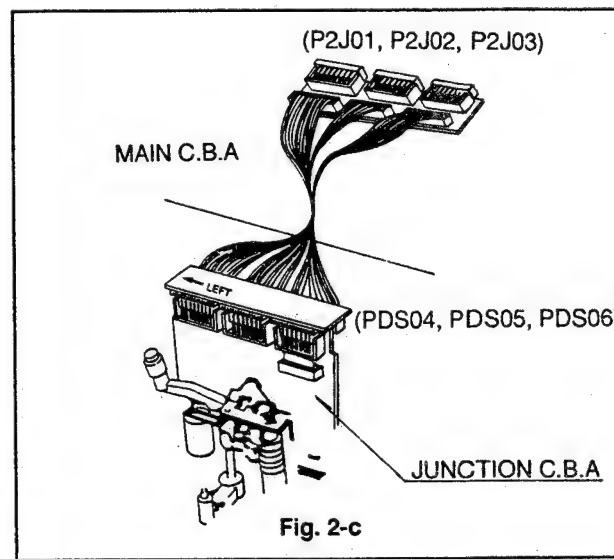
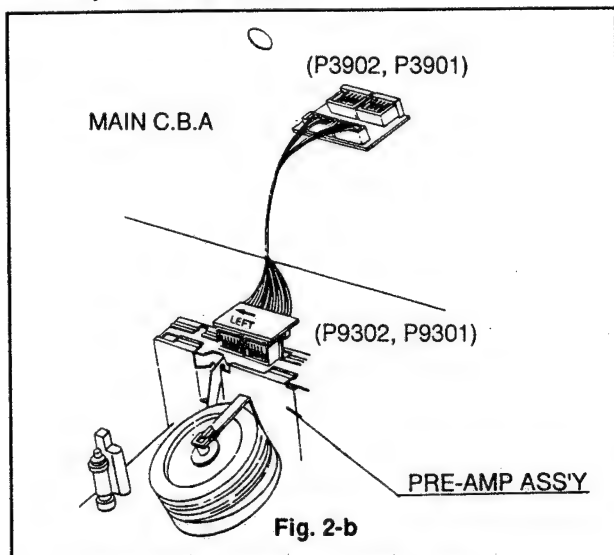
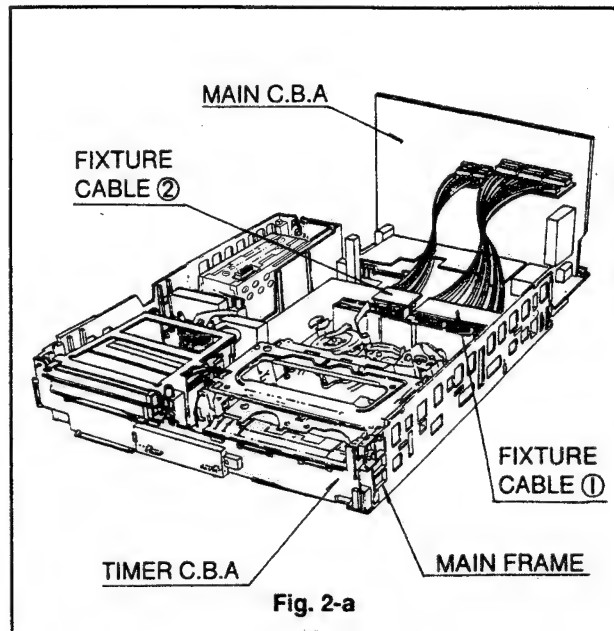
### 1. SVC FIXTURE Connecting Method

#### A. FIXTURE Cable ① Connecting Method.

- Connect the FIXTURE Cable ① between Main C.B.A and Junction C.B.A. (P2J01, P2J02, P2J03)
- At this time, should be in the left side " ← LEFT" mark on the P.C.B of the FIXTURE Cable ①. (See Fig. 2-a, 2-c)
- Connect the connector of "MAIN" mark of FIXTURE Cable ① with the Main C.B.A and the connector of "JUNCTION" mark with the Junction C.B.A. (See Fig. 2-a, 2-c)

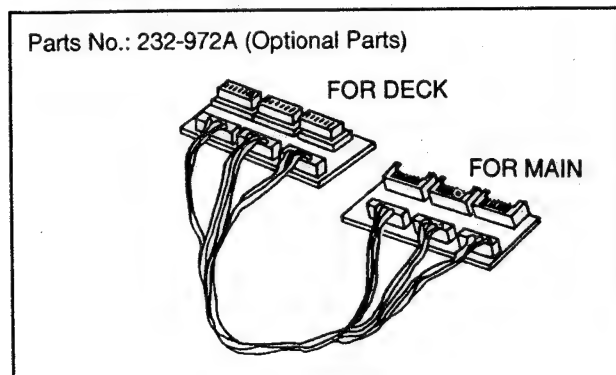
#### B. FIXTURE Cable ② Connecting Method.

- Connect the FIXTURE Cable ② between Main C.B.A and Pre-Amp Ass'y. (P3901=P9301, P3902=P9302)
- At this time, should be in the left side " ← LEFT" mark on the P.C.B of the FIXTURE Cable ②. (See Fig 2-a, 2-b)
- Connect the connector of "MAIN" mark of FIXTURE Cable ② with the Main C.B.A and the connector of "JUNCTION" mark with the Pre-Amp Ass'y. (See Fig. 2-a, 2-b)

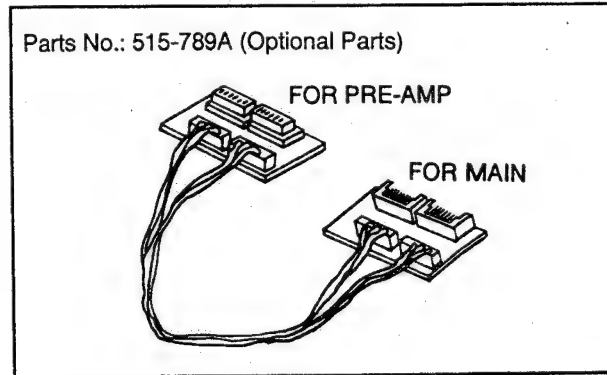


### 2. Electrical Service Fixture List

#### A. Fixture Cable ①.



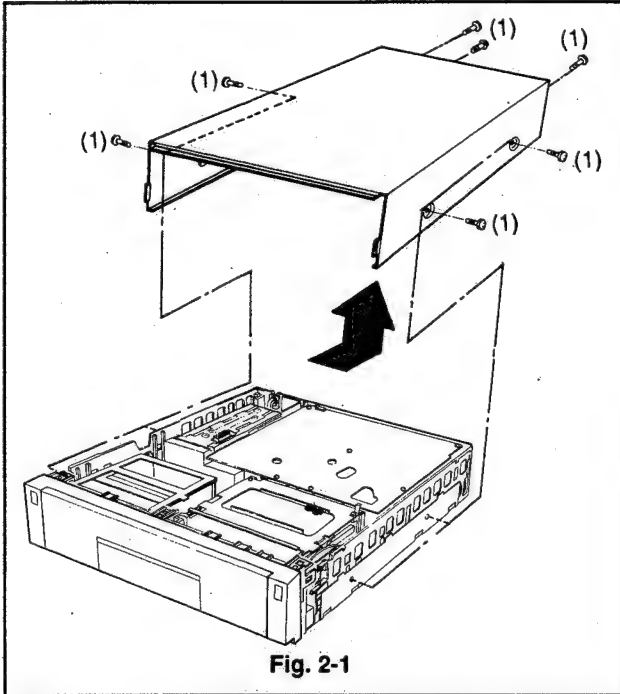
#### B. Fixture Cable ②.



# CABINET DISASSEMBLY

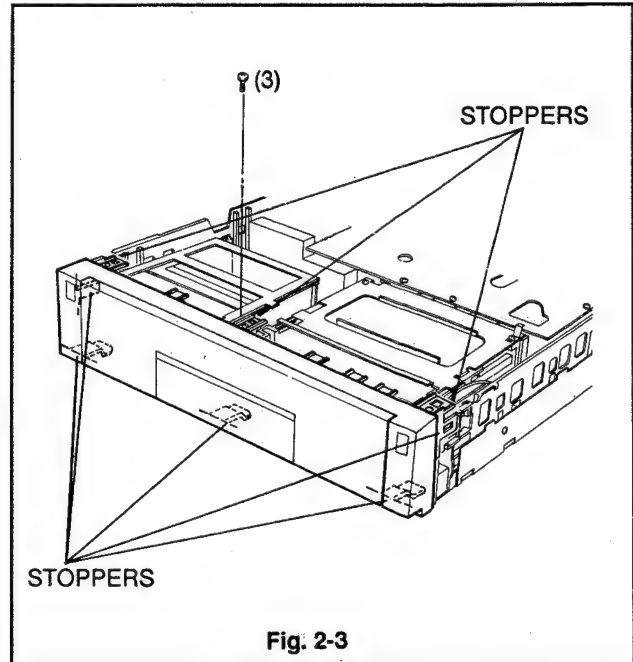
## 1. Top Case

- A. Release 7 screws (1).
- B. Hold the back of Top Case and lift it up slightly backward to remove it.



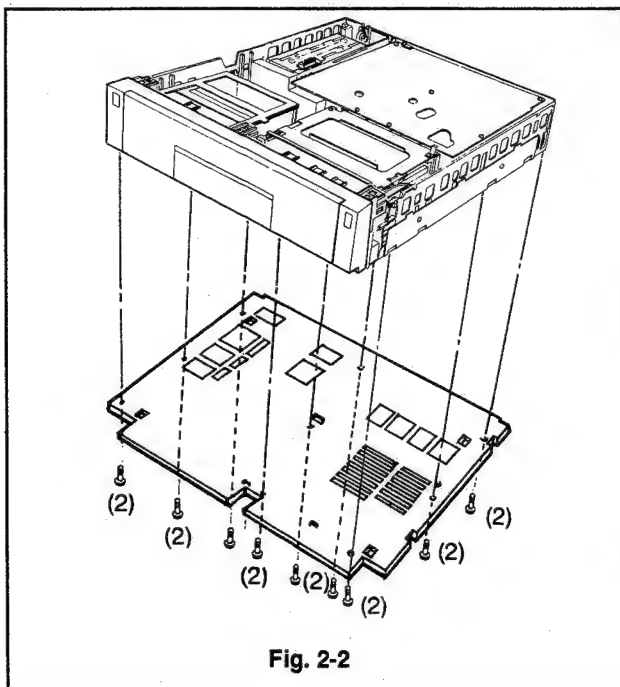
## 3. Front Panel

- A. Release 1 screws (3).
- B. Remove the stoppers on the top of Front Panel.
- C. Remove the stoppers on the bottom side Front Panel.



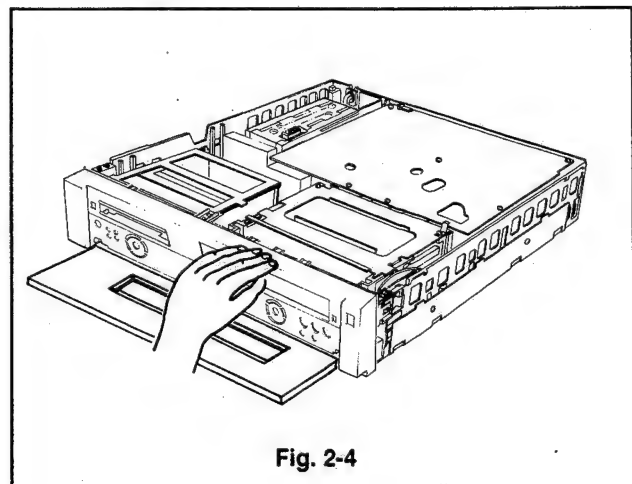
## 2. Bottom Cover

- A. Release 9 screws (2) to remove the Bottom Cover.



## \* Caution

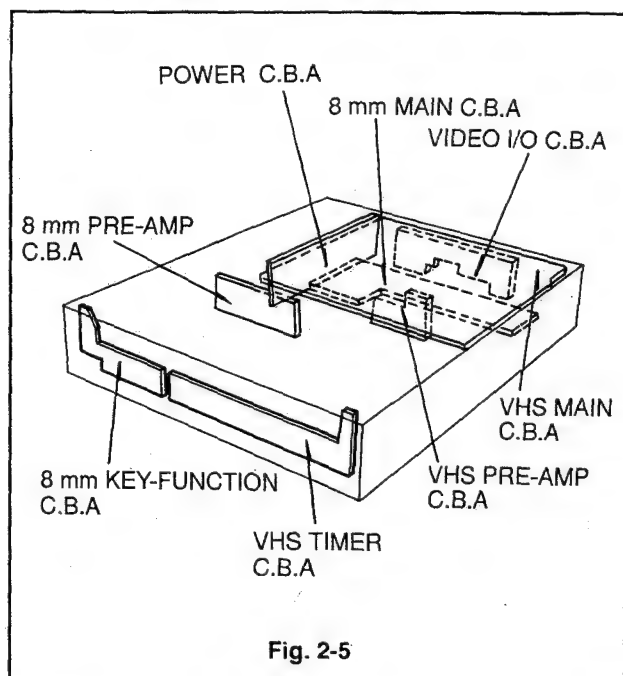
When reassemble the Front panel, assemble it in condition of inserting the Door Cassette inside, as shown in Fig.2-4





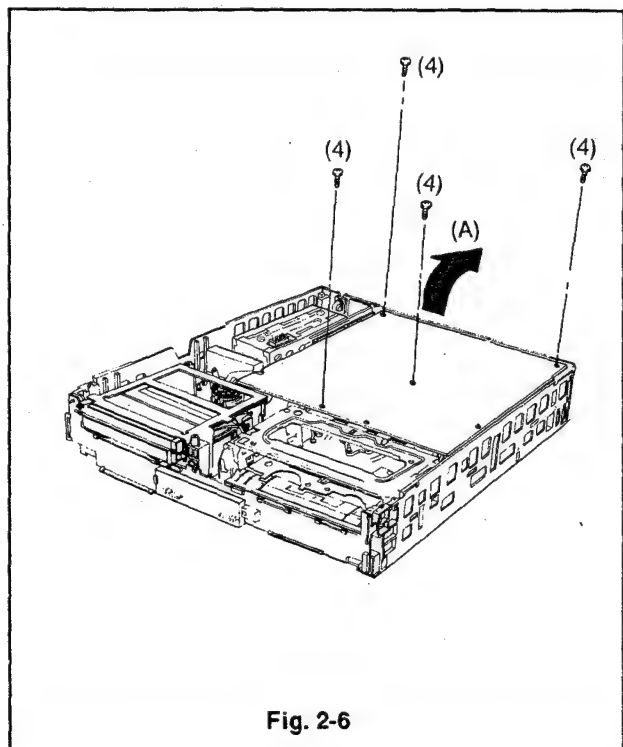
# CIRCUIT BOARD DISASSEMBLY

## 1. Circuit Board Arrangement



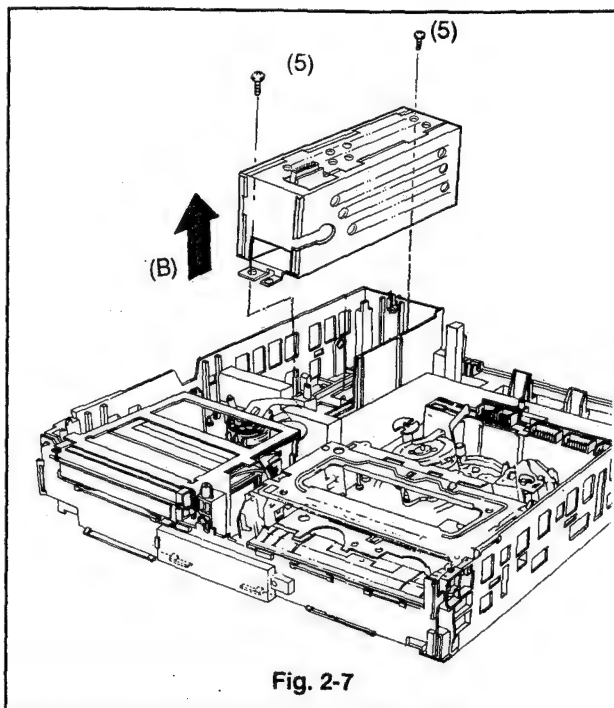
## 2. VHS Main Circuit Board

- Release 4 screws (4).
- Remove the Main C.B.A in the direction of arrow (A).



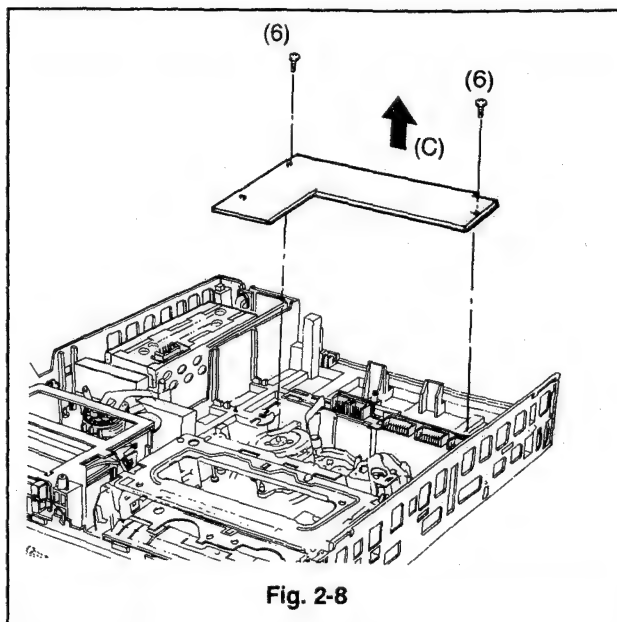
## 3. Power Circuit Board

- Remove the Bottom Cover. (Fig. 2-2)
- Release 2 screws (5).
- Remove the Power C.B.A in the direction of arrow (B).



## 4. 8mm Main Circuit Board

- Release 2 screws (6).
- Remove the 8mm Main C.B.A in the direction arrow (C).



## 5. 8mm/VHS Pre-Amp Circuit Board

- Release 2 screws (7).
- Remove the 8mm Pre-Amp C.B.A.
- Release 2 screws (8).
- Remove the VHS Pre-Amp C.B.A.

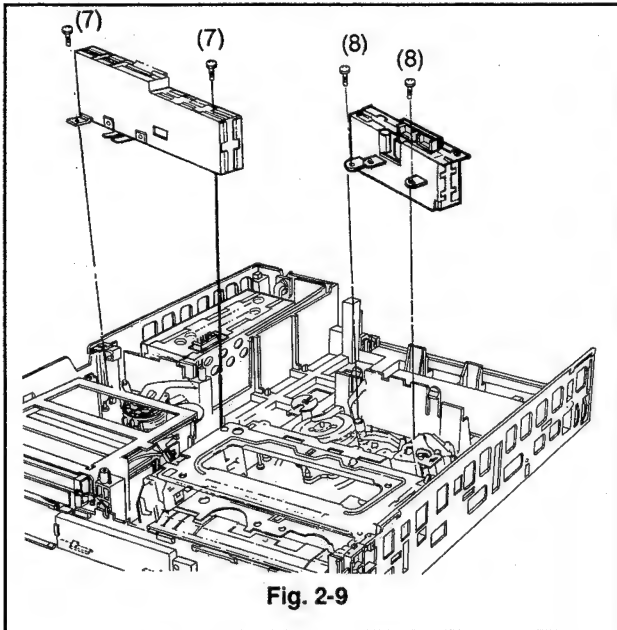


Fig. 2-9

## 6. 8 mm/VHS Key Function Circuit Board

- Release 1 screw (9).
- Release 9 stoppers in the direction arrow (D).
- Remove the 8mm/VHS Key Function C.B.A in the direction arrow (E).

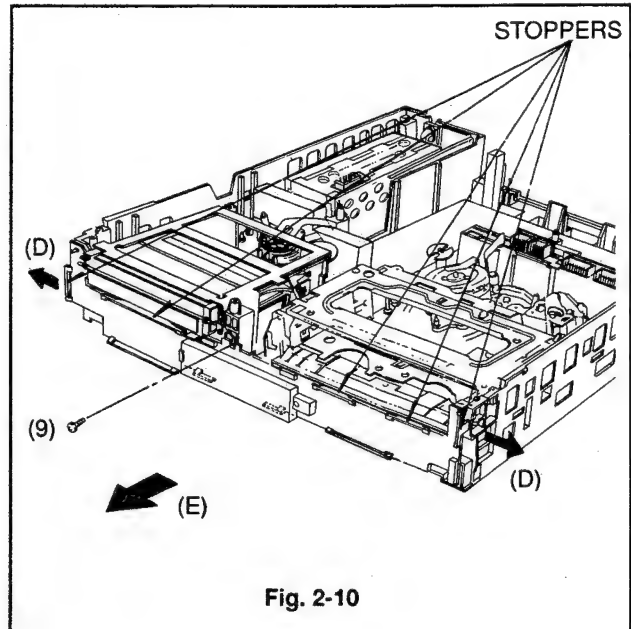


Fig. 2-10

## • Cabinet & Main Frame Section Replacement Parts List

RUN DATE : 95.09.26  
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
ASSEMBLY PARTS SECTION						
		A40	315-314N	FRAME	ASSY MAIN	NSP
		A41	3501R-0249A	BOARD ASSY	KEYBOARD 2NDDD1S	
		A42	3501R-0248A	BOARD ASSY	TIMER 2NDDD1S	
		A43	258-722F	PANEL	FRONT ASSY	
		A44	3501R-0247B	BOARD ASSY	SMPS	
		A45	501-522A	MODULE	FRE AMP ASSY	
		A46	3501R-0245D	BOARD ASSY	MAIN	
		A47	3501R-0251A	BOARD ASSY	8MM PRE-AMP(2NDDD1S)	
		A48	3501R-0246A	BOARD ASSY	8MM MAIN (2NDDD1S)	
PARTS SECTION						
		250	217-472C	CASE	TOP	NSP
		251	321-526A	BRACKET	HOUSING	
		260	315-300B	FRAME	MAIN	
		262	257-061A	PLATE	GND (FTZ)	NSP
		263	324-976A	HOLDER	PWB	NSP
		275	324-672A	HOLDER	DIGITRON	NSP
		278	273-116A	KNOB	TRACKING	
		280	258-717F	PANEL	FRONT	
		282	220-075D	COVER	DOOR ASSY	
		283	226-104F	DOOR	CST	
		284	442-469A	SPRING	DOOR	
		288	524-013A	MAGNET	ASSY DOOR	
		289	321-718A	BRACKET	ASSY COVER DOOR	
		290	321-719A	BRACKET	ASSY DAMPER	
		291	435-465B	GEAR	ASSY DAMPER(T;60)	
		300	681-051A	CORD	KKP-419J B-172 KLCE-2F PAL	NSP
		300	681-951A	CORD	H03VH2-F 2X0.75MM LP21R/PE221	
		320	258-596G	PANEL	ASSY DISTRIBUTOR	
		321	257-006A	PLATE	BOTTOM GROUND	
		330	221-834A	COVER	BOTTOM	
		340	226-064K	DOOR	CST 8MM	
		341	442-591A	SPRING	DOOR	
		342	340-088A	HOLDER	ASSY P/AMP 8MM	
SCREW						
		451	353-046C	SCREW	(3X10 FZMY)	
		452	353-051A	SCREW	SPECIAL(3X10 FZMY)	
		459	353-046C	SCREW	(3X10 FZMY)	
		462	353-136A	SCREW	SPECIAL(4.6X12.5 FBK)	
		472	353-090A	SCREW	SPECIAL TP	

RUN DATE : 95.09.26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
CIRCUIT BOARD ASSEMBLY				
		PBIO0	6871R-0252A	I/O BOARD (2NDDD1S)
		PBJT0	515-908B	JUNCTION 2 (G/S)
		PBM00	6871R-0245D	VHS MAIN (DV13P 3GL1)
		PBT00	6871R-0248A	TIMER 2NDDD1S

# SECTION 3 ELECTRICAL

## ELECTRICAL ADJUSTMENT PROCEDURES

### • Electronic Test Equipment Requirement

- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>• Oscilloscope</li> <li>• Video signal Generator</li> <li>• Level Meter</li> <li>• Frequency Counter</li> </ul> | <ul style="list-style-type: none"> <li>• + Driver (8mm)</li> <li>• Test Tape (SP)-PAL, (VHS, 8mm)</li> <li>• Test Tape (SP)-PAL Stereo</li> </ul> | <ul style="list-style-type: none"> <li>• Recording Tape (VHS)</li> <li>• Digital Multimeter</li> </ul> |
|--|---|--|

### 1. VHS Circuit Adjustment

#### 1-1. Servo Circuit

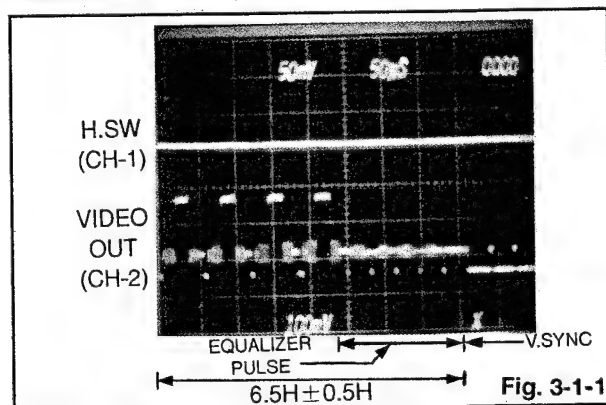
##### 1-1-1. PG Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
PLAYBACK	$6.5H \pm 0.5H$ ( $1H = 64.0\mu\text{sec}$ )	TP201 (H.SW) TP202 (V.Out terminal)	VR201

#### Procedure :

- Connect CH-1 of oscilloscope to TP201 (H.SW) and CH-2 to TP202 (Video Out terminal).
- Playback a VHS PAL SP test tape.
- Trigger the complex Video signal to CH-1 H.SW, and adjust VR201 so that the distance from switching point of H.SW signal to the starting point of vertical synchronized signal is  $6.5H \pm 0.5H$  ( $416 \pm 32\mu\text{sec}$ ).

#### Waveform



#### 1-2. Audio Circuit

##### 1-2-1. Record Bias Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
RECORD (SP)	$2.5 \pm 0.1\text{mV}$	R473 Both Terminal	VR403

#### Procedure :

- Connect (+), (-) terminal of Level Meter to both terminals R473. : TP403 (+), TP404 (-)
- Loading the recording tape and record.
- Adjust VR403 so that the oscillation voltage fit to specification.

### 1-2-2. VCO (Record Current Frequency) Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
AV/EE (without signal)	1.4MHz $\pm$ 5kHz	IC402 Pin ④⑤ (TP401)	VR401
	1.8MHz $\pm$ 5kHz	IC402 Pin ⑤② (TP402)	VR402

**Procedure :**

- Disconnect the P4904 connector Ass'y from VHS Main circuit board.
- Connect the P4904 Pin ④ to the P4904 Pin ⑤.
- Connect the Frequency Counter to IC402 Pin ④⑤ (TP401) and adjust VR401 so that the Frequency Counter is 1.4MHz $\pm$ 5kHz.
- Connect the Frequency Counter to IC402 Pin ⑤② (TP402) and adjust VR402 so that the Frequency Counter is 1.8MHz $\pm$ 5kHz.

**Reference)**  
The set and the Frequency Counter should be connected with 1:1 probe.

### 1-3. Tuner/IF Circuit

#### 1-3-1. AFC Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
CH-11 (217.25MHz) PAL B/G Reception	DC 2.5V $\pm$ 0.1V	IC701 Pin ⑮ (AFC TP)	T701

**Procedure :**

- Connect as shown in Fig. 3-1-2.
- Receive the CH-11 (217.25MHz, strength of RF electric field : 70dB $\mu$ V).
- Adjust T701 so that the Digital voltmeter 2 is DC 2.5 $\pm$ 0.1V.

**CONNECTION DIAGRAM**

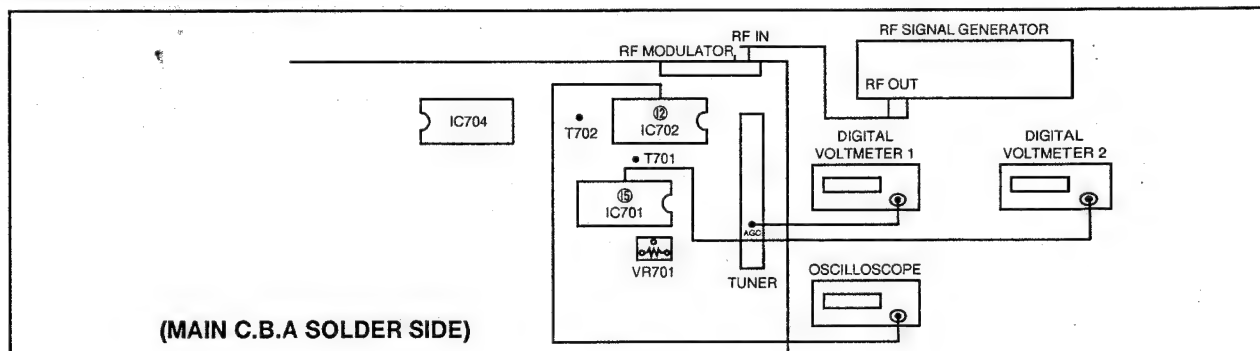


Fig. 3-1-2

#### 1-3-2. RF AGC Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
CH-11 (217.25MHz) Normal Reception	DC 5.5 $\pm$ 0.1V	Tuner AGC Terminal (AGC TP701)	VR701

**Procedure :**

- Connect as shown in Fig. 3-1-2.
- Receive the CH-11 (217.25MHz, strength of RF electric field : 70dB $\mu$ V).
- Adjust VR701 so that the Digital voltmeter 1 is DC 5.5 $\pm$ 0.1V.



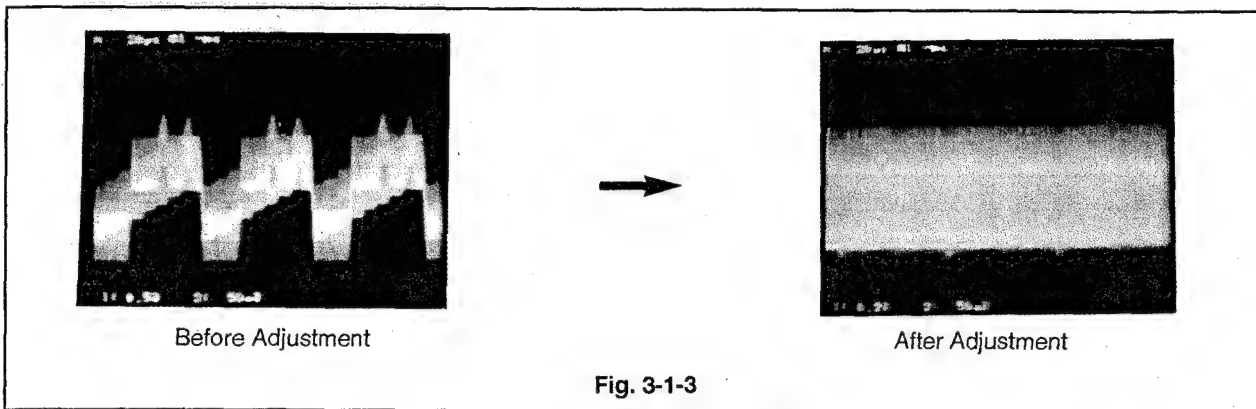
### 1-3-3. SIF Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
CH-11 (217.25MHz) Normal Reception	Refer to waveform	IC702 Pin ⑫ (SIF TP703)	T702

#### Procedure :

- Connect as shown in Fig. 3-1-2.
- Receive the CH-11 (217.25MHz, strength of RF electric field : 70dB $\mu$ V).
- Adjust T702 so that the waveform of oscilloscope is as shown in Fig. 3-1-3.
- Setting mode of oscilloscope  
Time : 20 $\mu$ sec.  
Voltage : 0.5V.

#### Waveform



#### \*Caution in testing

- When practicing this adjustment, adjust after more than 10minutes with TV set turning on.
- Adjust after completing itself test of measuring apparatus.
- Sweep OSC marker frequency is followed by Table 1.

#### \*Abbreviation

- APC : Adjacent Picture Carrier
- SIF : Sound Intermediate Frequency
- CIF : Color Intermediate Frequency
- CEN : Center Frequency
- PIF : Picture Intermediate Frequency
- ASC : Adjacent Sound Carrier

Table 1 Frequency Table

(MHz)

BROADCASTING SYSTEM	ADJUSTMENT MARKER FREQUENCY					
	APC	SIF	CIF	CEN	PIF	ASC
PAL B/G	31.90	33.40	34.47	36.00	38.90	40.40

## 2. 8mm Circuit Adjustment

### 2-1. Servo Circuit

#### 2-1-1. PG Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
PLAYBACK	$7H \pm 1.8H$ ( $1H = 64.0\mu\text{sec}$ )	P2814 Pin ③ (H.SW) PV402 Pin ① (V.Out terminal)	VR202

**Procedure :**

- Connect CH-1 of oscilloscope to TP801 (P2814 Pin ③, H.SW) and CH-2 to TP802 (PV402 Pin ①, Video Out terminal).
- Playback a 8mm PAL SP test tape.
- Trigger the complex Video signal to CH-1 H.SW, and adjust VR202 so that the distance from switching point of H.SW signal to the starting point of vertical synchronized signal is  $7H \pm 1.8H$  ( $448 \pm 115.2\mu\text{sec}$ ).

**Waveform**

Fig. 3-2-1

### 2-2. Y/C Circuit

#### 2-2-1. Playback Output Level Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
PLAYBACK (SP)	$1.0 \pm 0.1V_{p-p}$	TP3A1 (8mm Video Out)	VR3A0

**Procedure :**

- Connect CH-1 of oscilloscope to TP3A1.
- Playback a 8mm PAL SP test tape (Color bar with 100% white signal).
- Adjust VR3A0 so that Video out level is  $1.0 \pm 0.1V_{p-p}$ .
- If only measurement point is the Video out Jack (SCART Jack), specification is  $2 \pm 0.2V_{p-p}$ .

**Waveform**

Fig. 3-2-2

#### 2-2-2. Color VCO Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
PLAYBACK (SP)	DC $2.5 \pm 0.1V$	TP3A2	FL3A1

**Procedure :**

- Connect CH-1 of oscilloscope to TP3A2.
- Playback a 8mm PAL SP test tape (Color bar with 100% white signal).
- Adjust FL3A1 so that DC level is  $2.5 \pm 0.1V$ .

## 2-3. Audio Circuit

### 2-3-1. VCO Adjustment

2-3-1. VCO Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
STOP	DC $2.05 \pm 0.1V$	TP4A2	VR4A0
		TP4A4	VR4A4

**Procedure :**

- Connect the Digital Multimeter to TP4A2 and adjust VR4A0 so that the Digital Multimeter is  $DC2.05 \pm 0.1V$ .
- Connect the Digital Multimeter to TP4A4 and adjust VR4A4 so that the Digital Multimeter is  $DC2.05 \pm 0.1V$ .

### 2-3-2. Deviation (L) Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
PLAYBACK (SP)	$0 \pm 0.5dBm$	SCART AUDIO (L) OUT	VR4A1
<b>Procedure :</b> a. Connect the (+) terminal of Level Meter to SCART Audio (L) Out. b. Playback a 8mm PAL Mono test tape. c. Adjust VR4A1 so that level is $0 \pm 0.5dBm$ .			

### 2-3-3. Deviation (R) and Matrix Adjustment

2-3-3. Deviation (R) and Matrix Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
PLAYBACK (SP)	$0 \pm 3\text{dBm}$	SCART AUDIO (R) OUT	VR4A3
		SCART AUDIO (L), (R) OUT	VR4A2

**Procedure :**

- Connect the (+) terminal of Level Meter to SCART Audio (R) Out.
- Playback a 8mm PAL Stereo test tape.
- Adjust VR4A3 so that level is  $0 \pm 3\text{dBm}$ .
- And then, connect the CH-1 of oscilloscope to SCART Audio (L) Out.
- Connect the CH-2 of oscilloscope to SCART Audio (R) Out.
- Adjust VR4A2 so that the separation of stereo is done well.

# MEMO

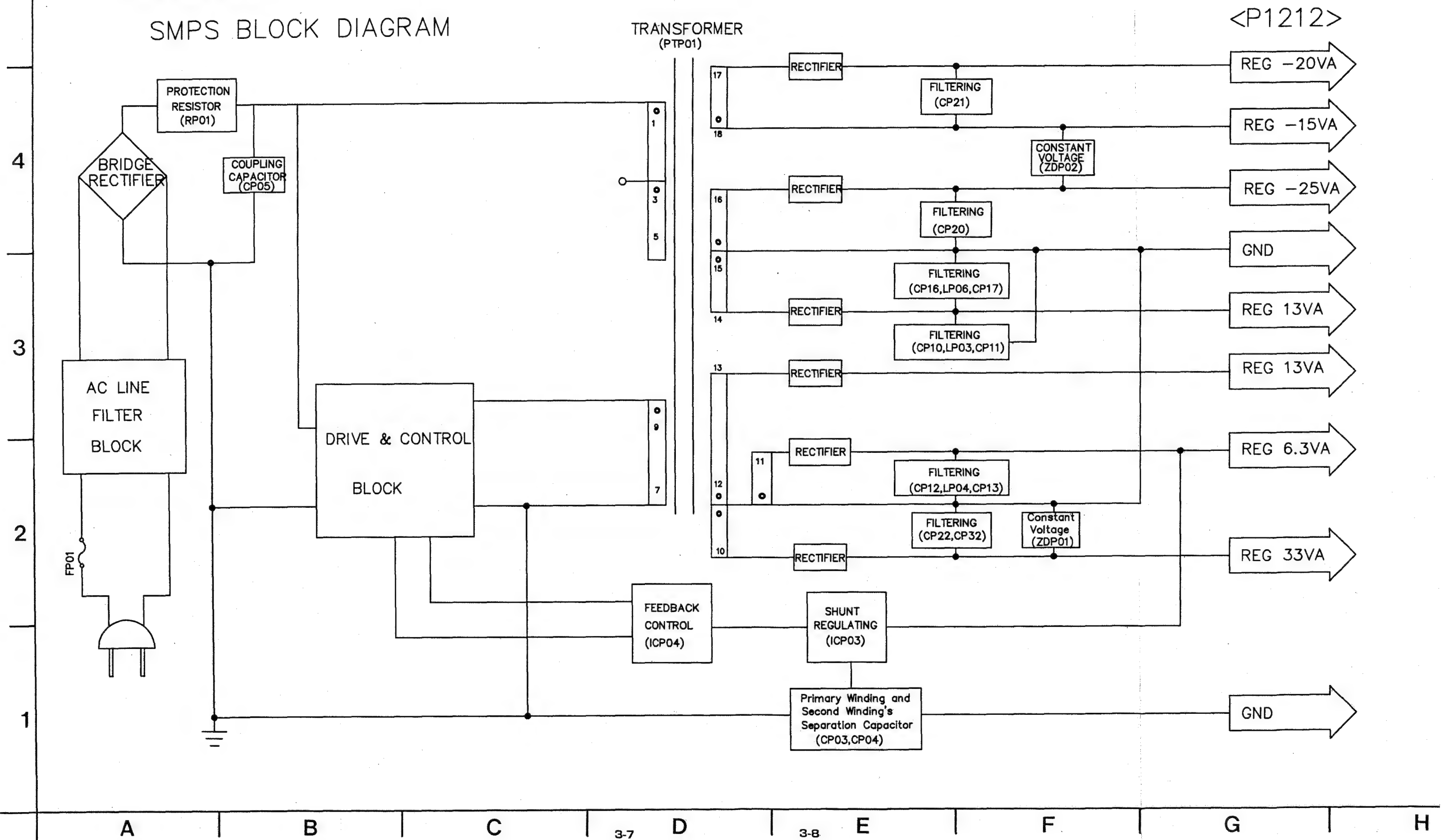
[illegible]

# BLOCK DIAGRAMS

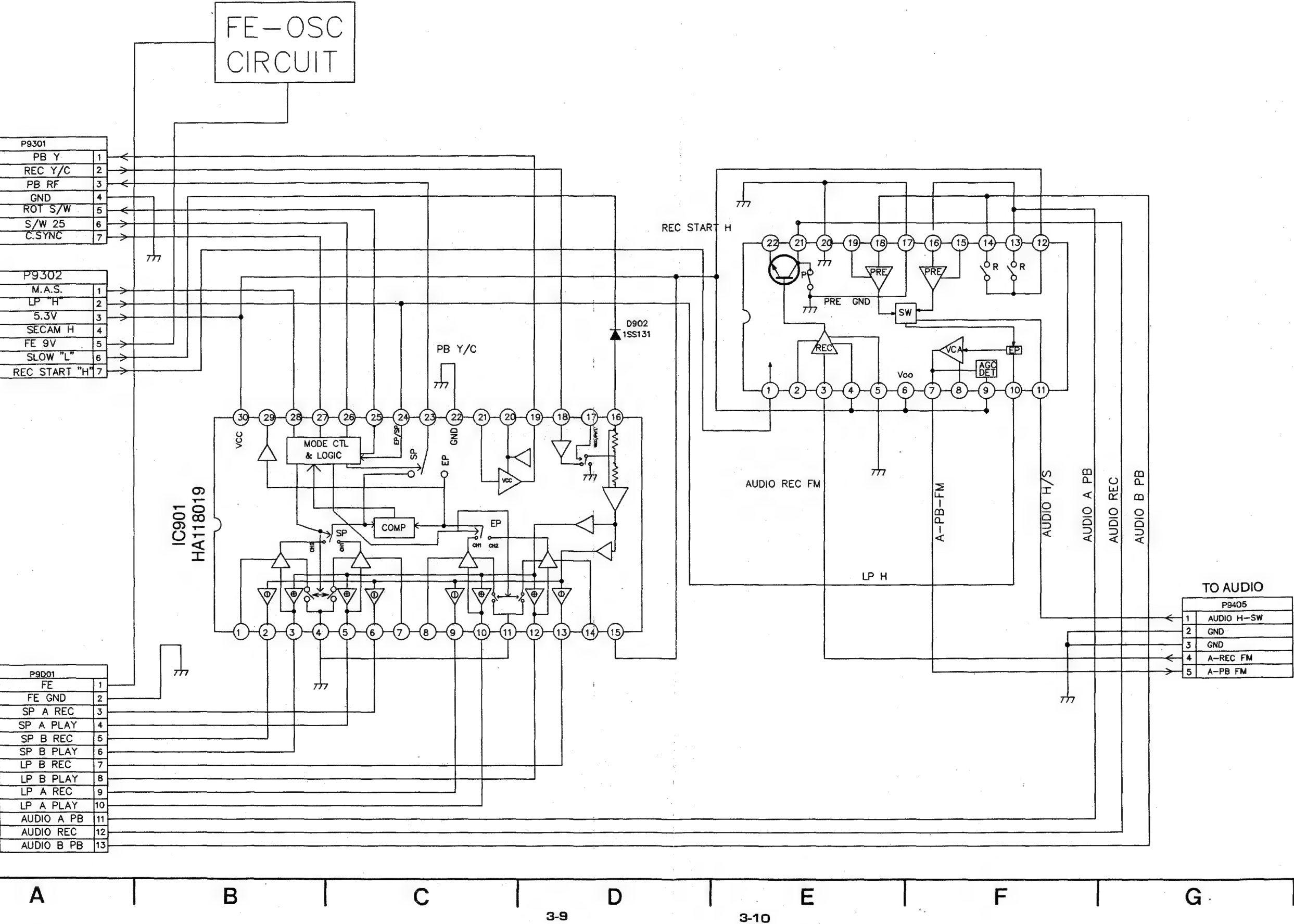
## 1. VHS Block Diagrams

### 1-1. Power Block Diagram

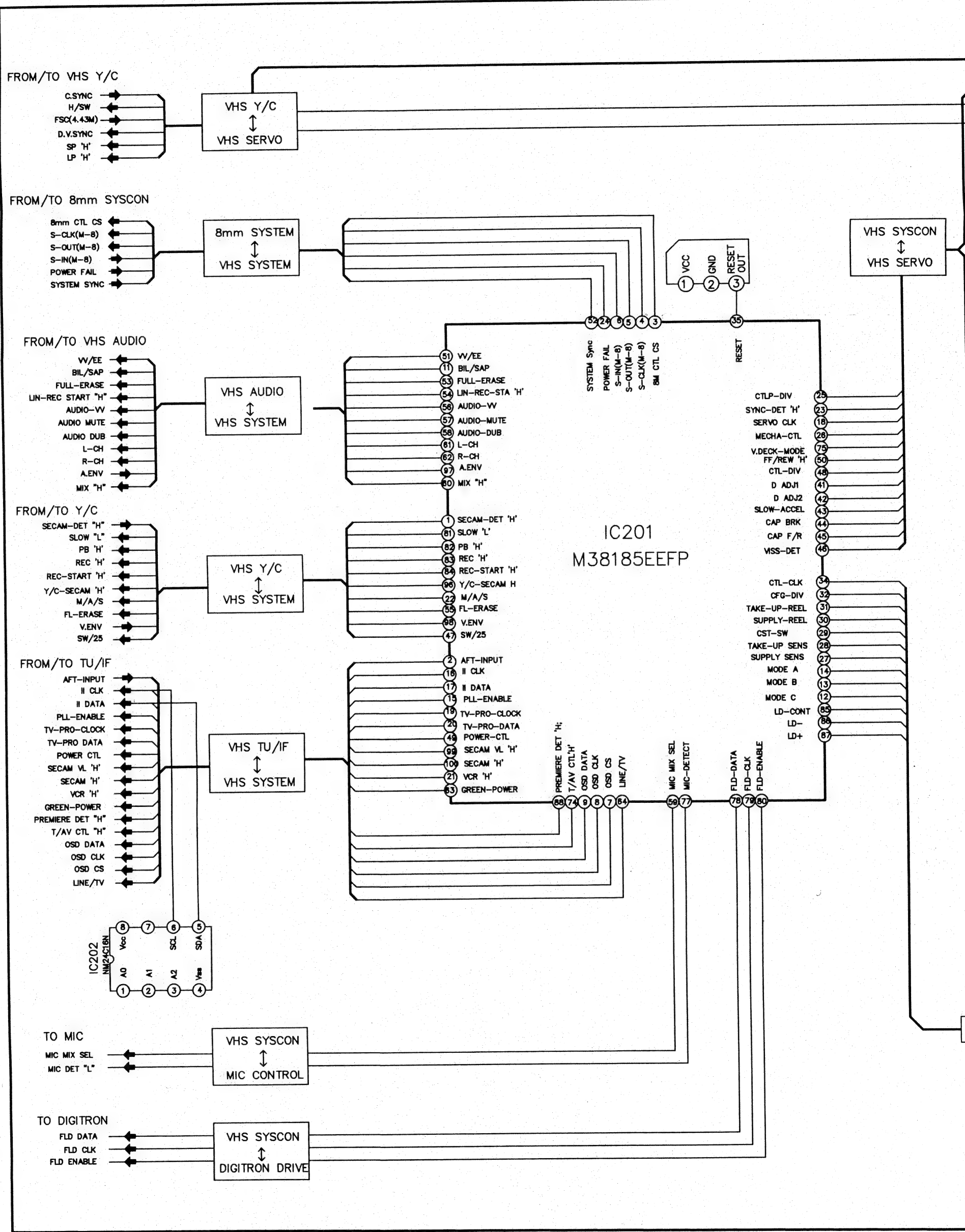
SMPS BLOCK DIAGRAM



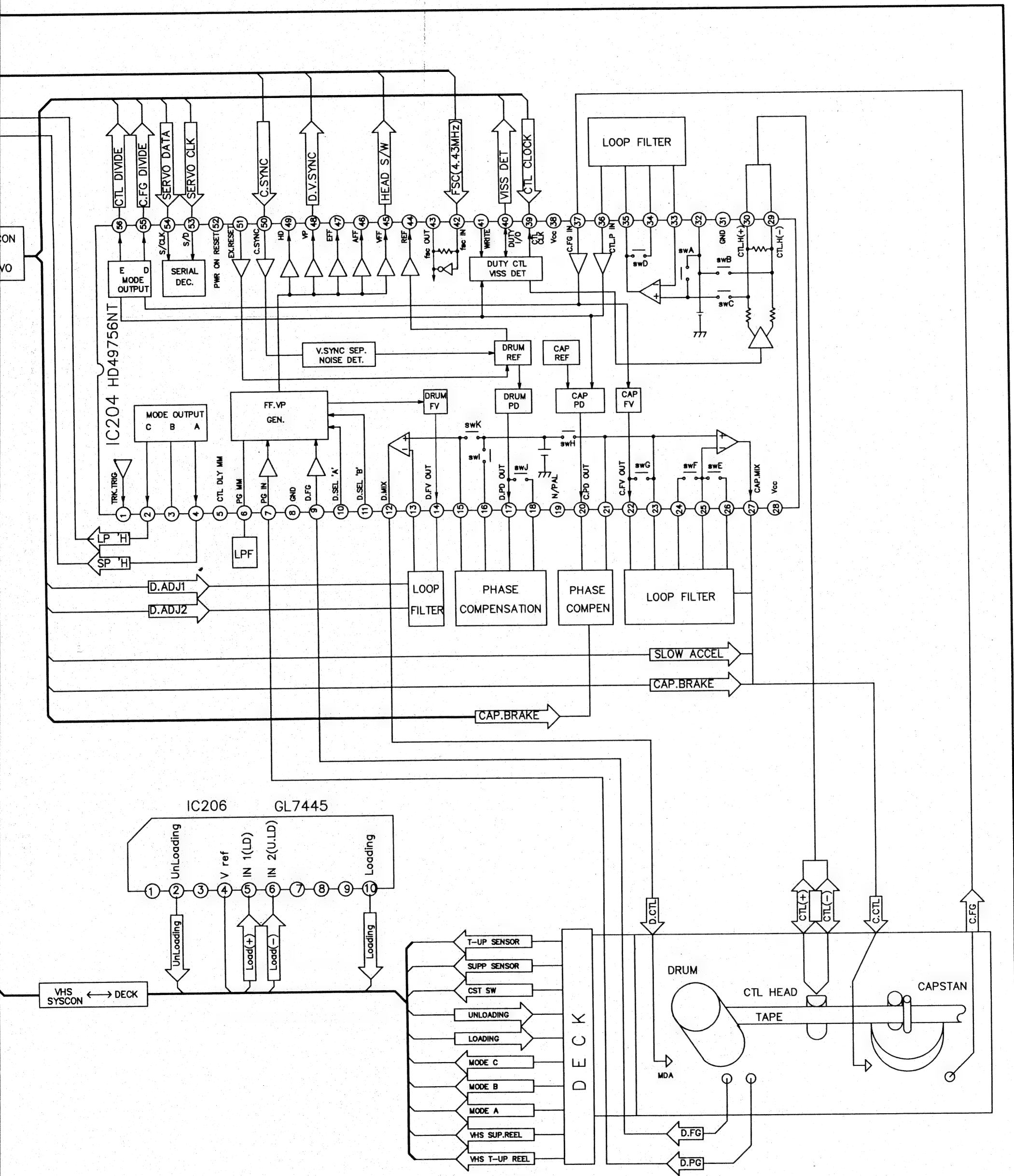
1-2. Pre-Amp Block Diagram



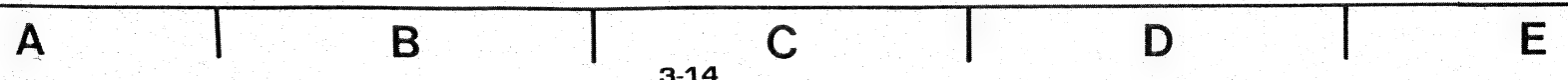
### 1-3. Main System (Servo, Syscon) Block Diagram





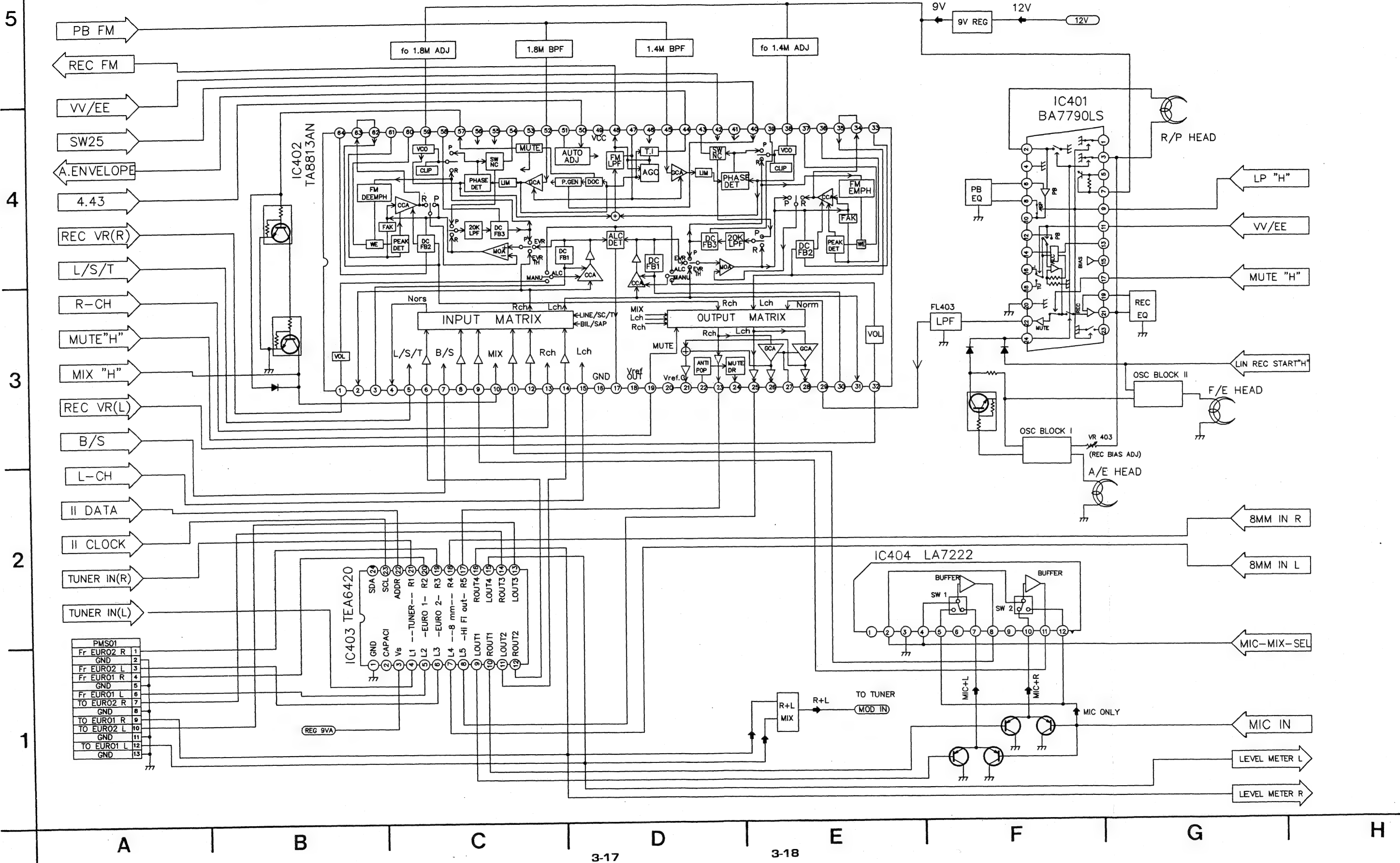


A vertical number line with tick marks labeled 1 through 8. The line is oriented vertically, with 1 at the bottom and 8 at the top. Each tick mark is accompanied by its corresponding numerical label to the right of the line.



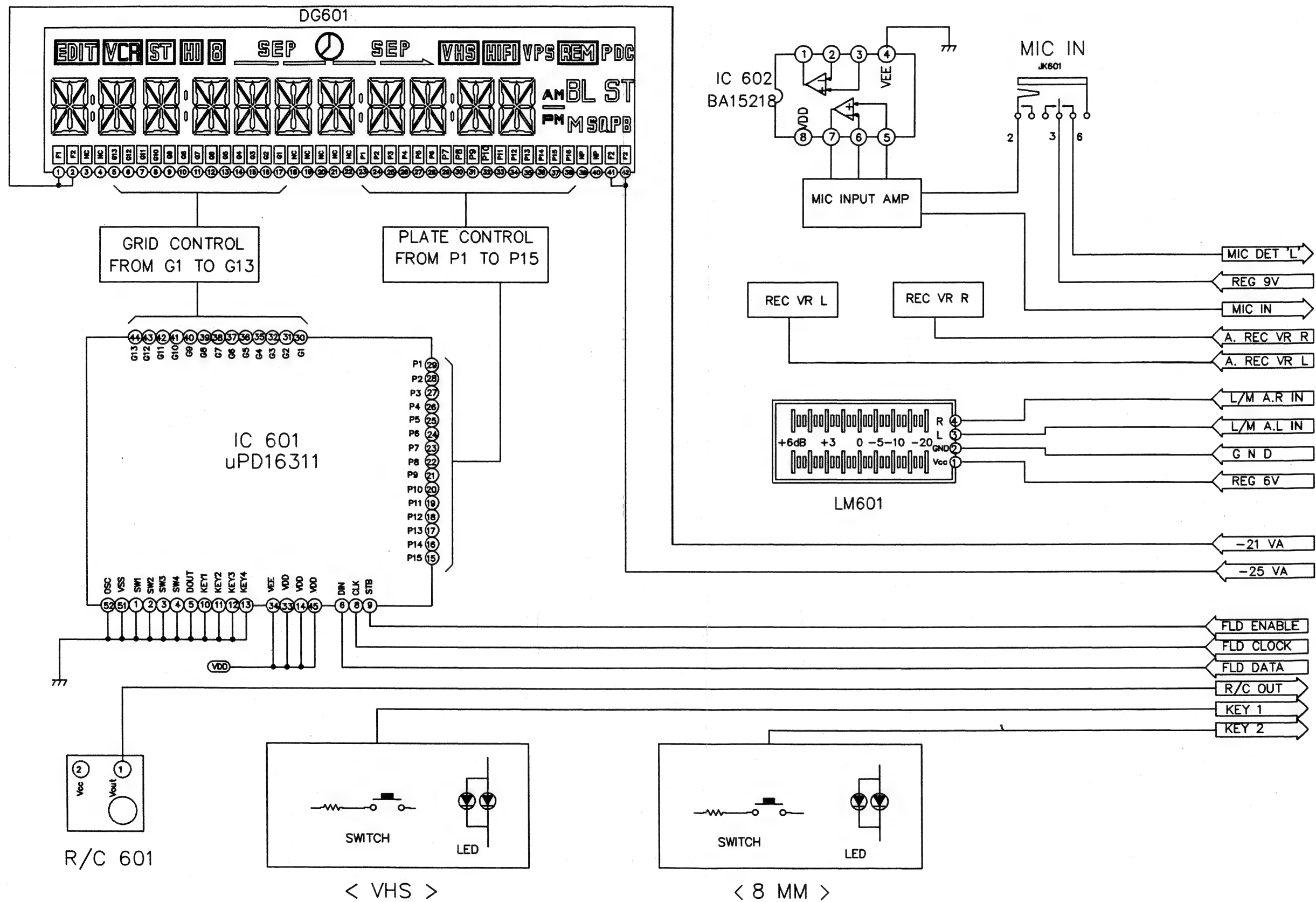


1-5. Audio Block Diagram

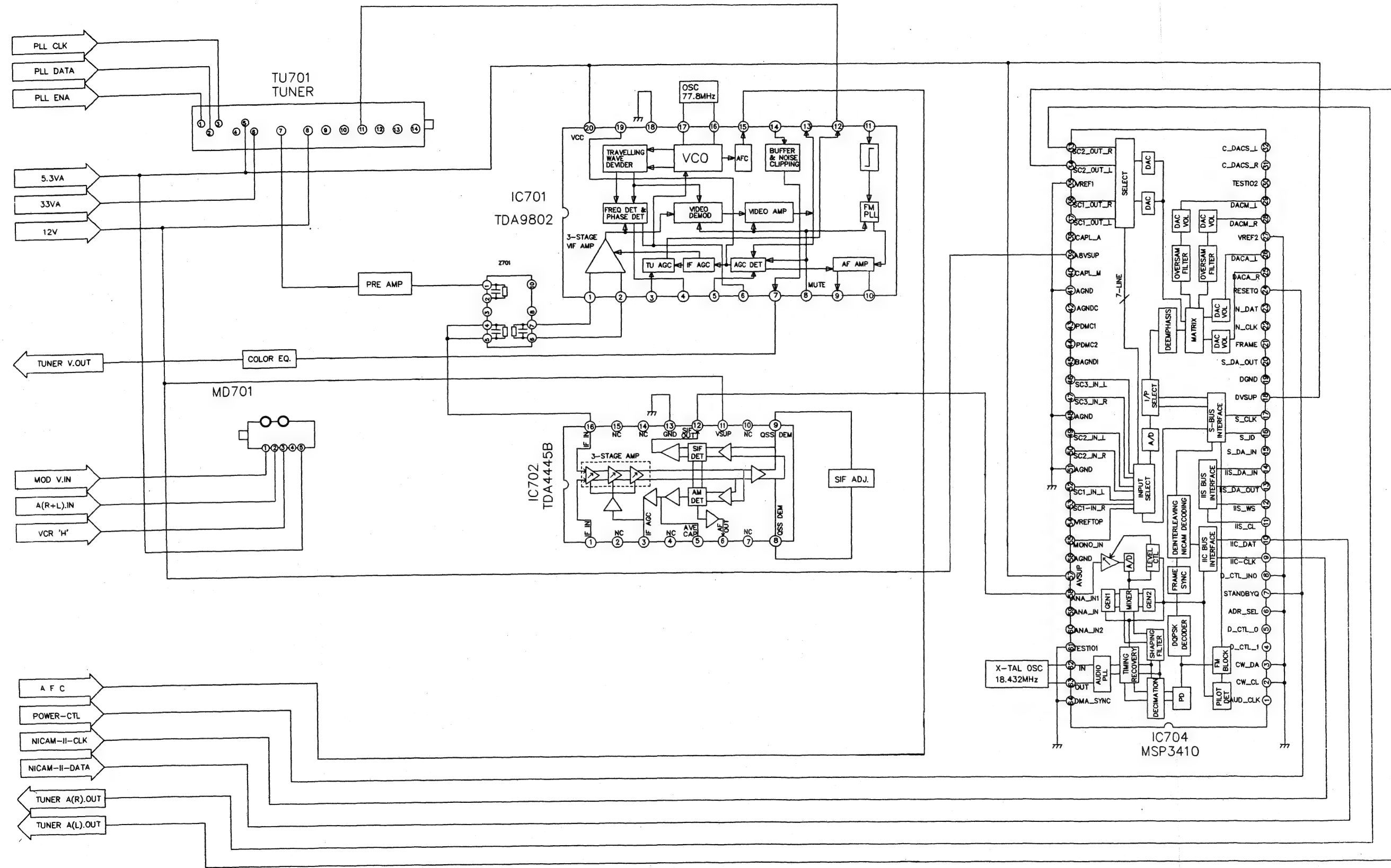




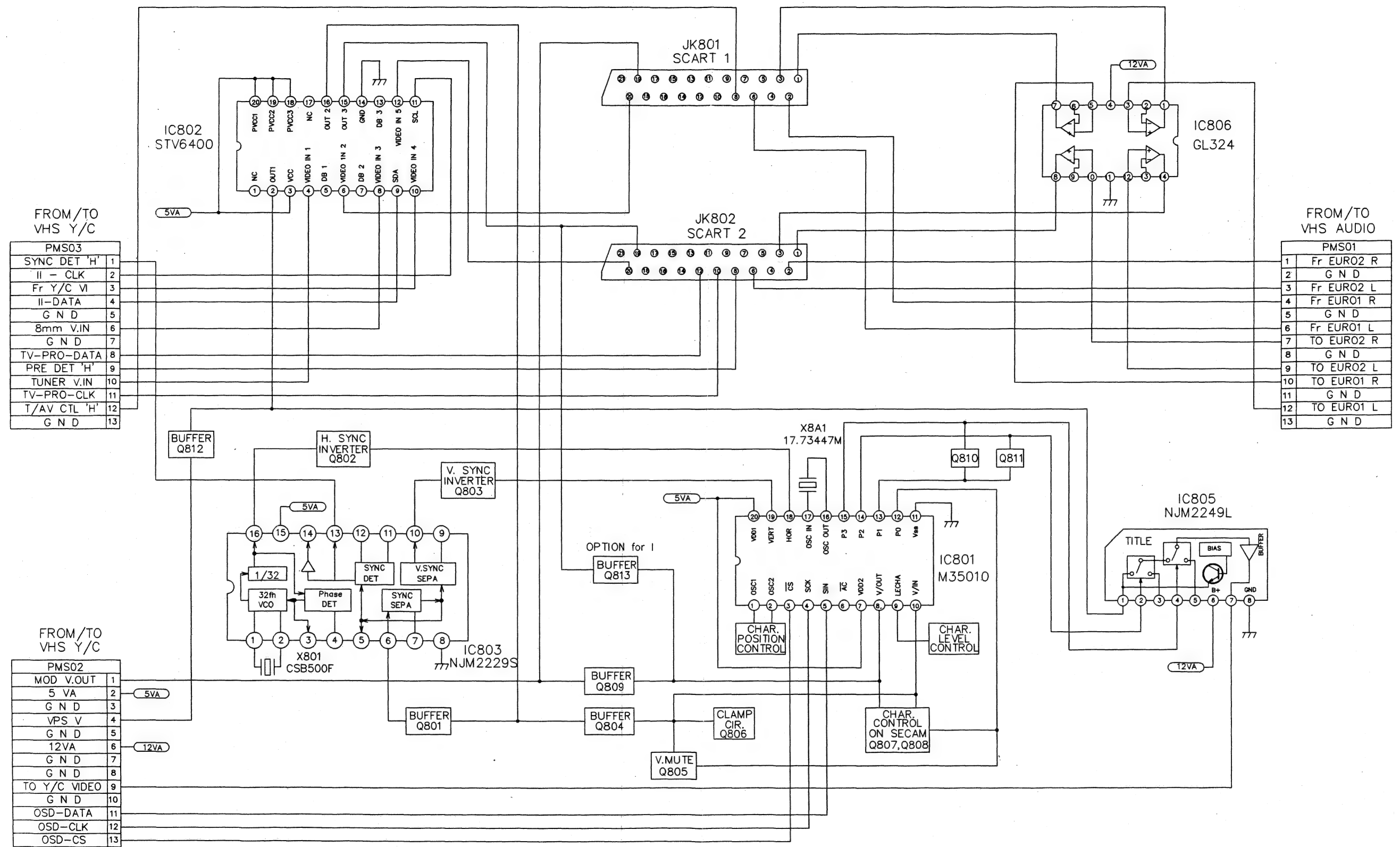
# 1-6. Timer Block Diagram



1-7. Tuner/IF Block Diagram



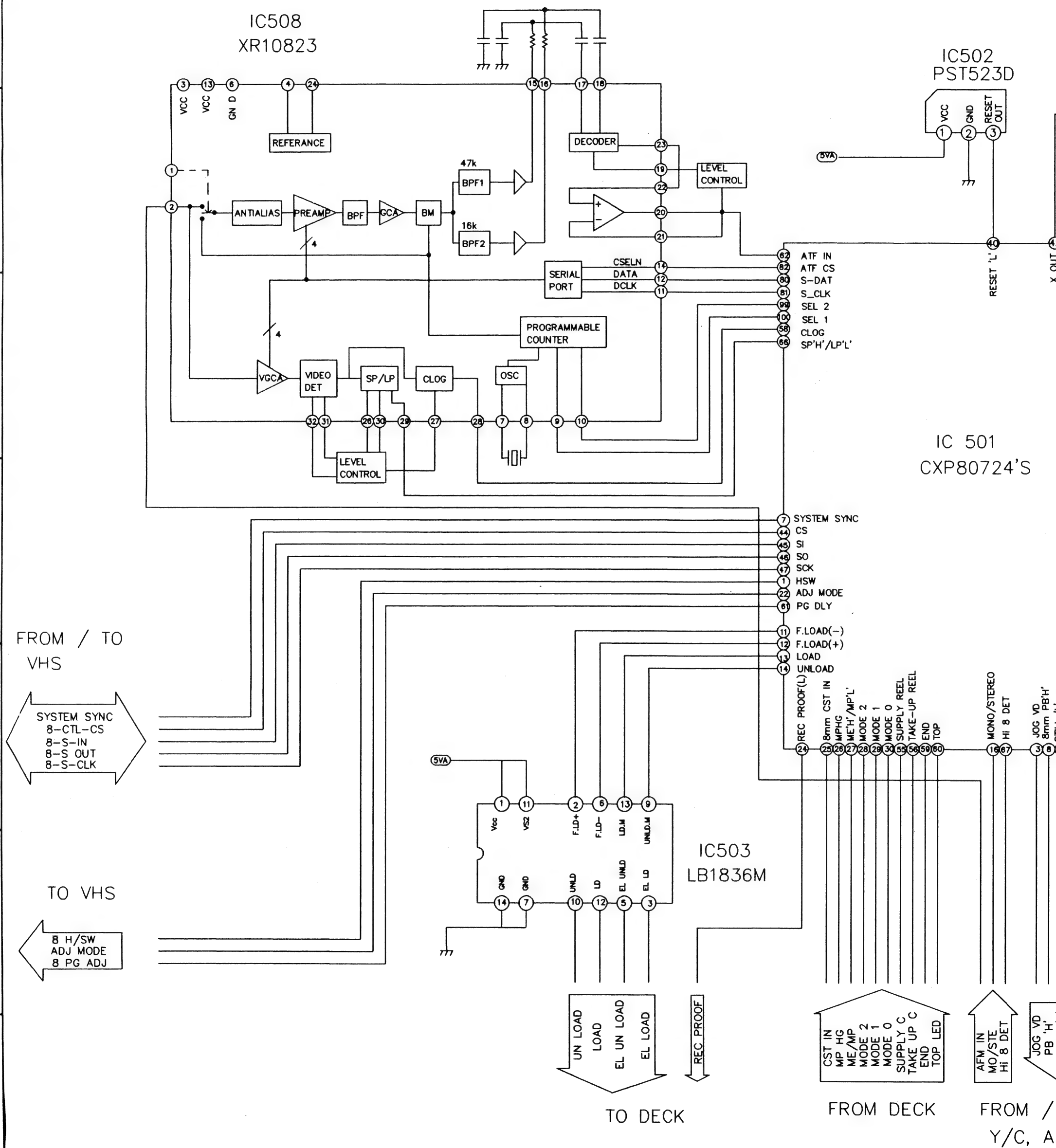
# 1-8. In/Out & Function OSD Block Diagram

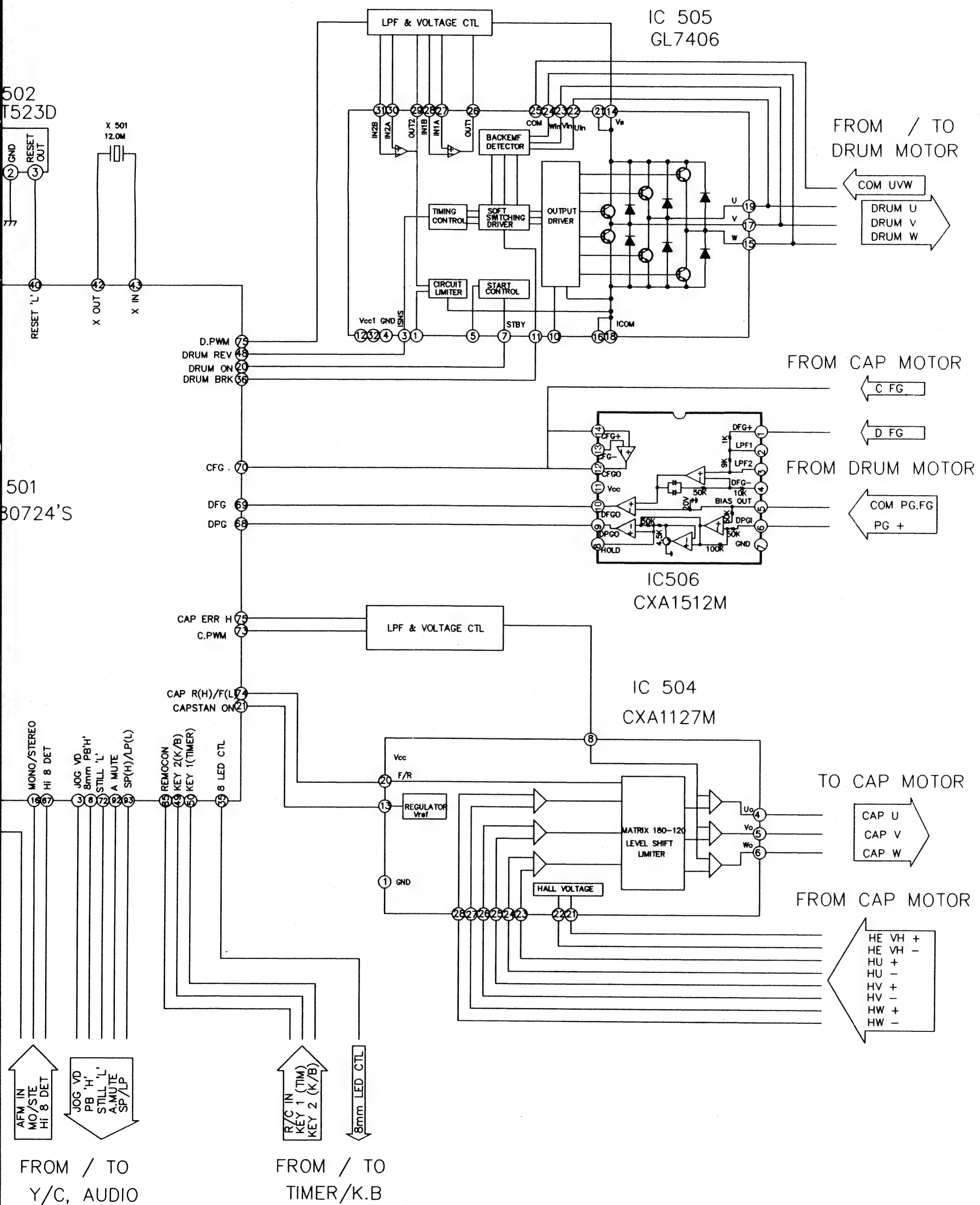




## 2. 8mm Block Diagrams

### 2-1. Main System (Servo, Syscon) Block Diagram





F

G

H

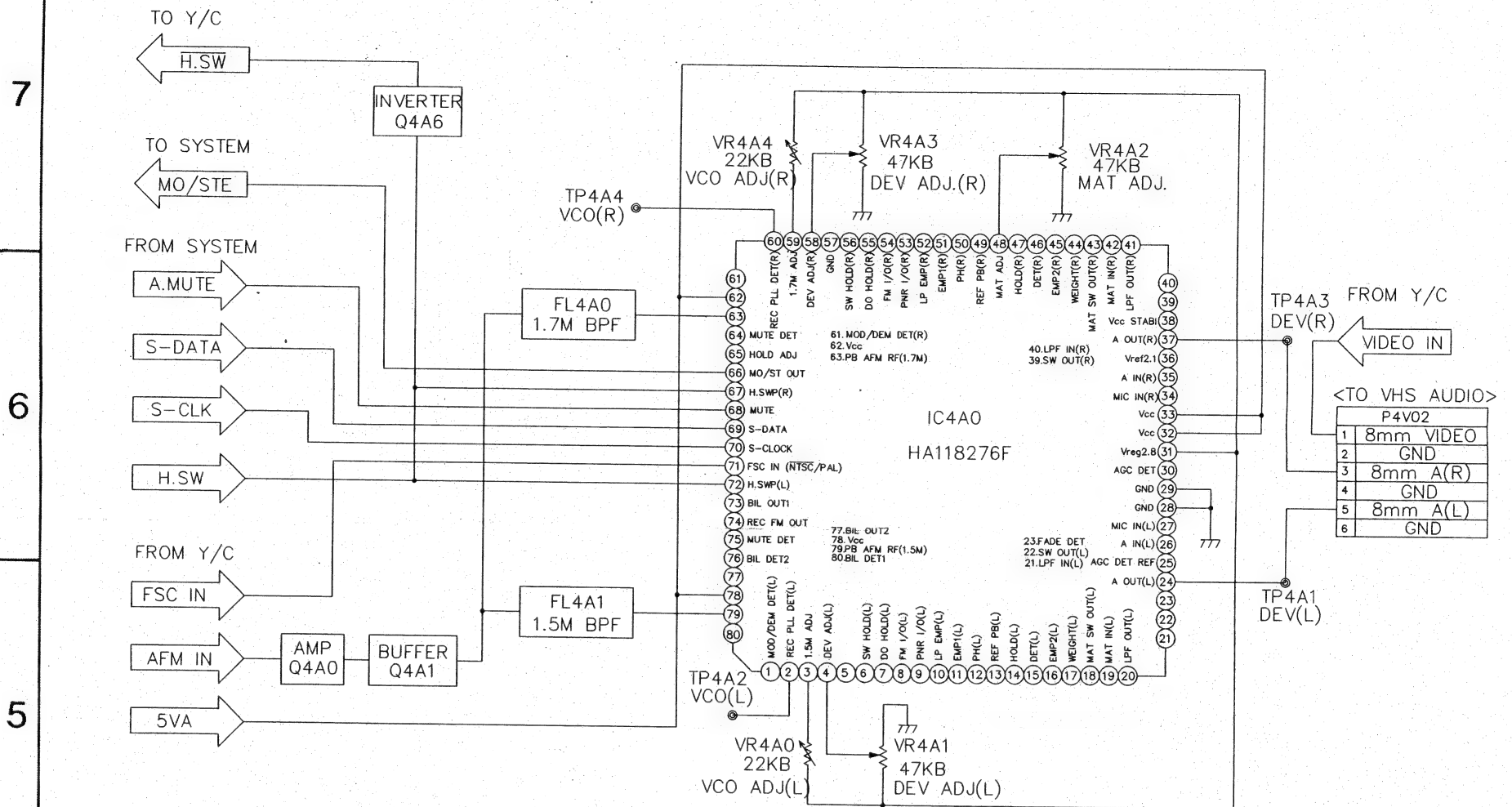
I

J

K

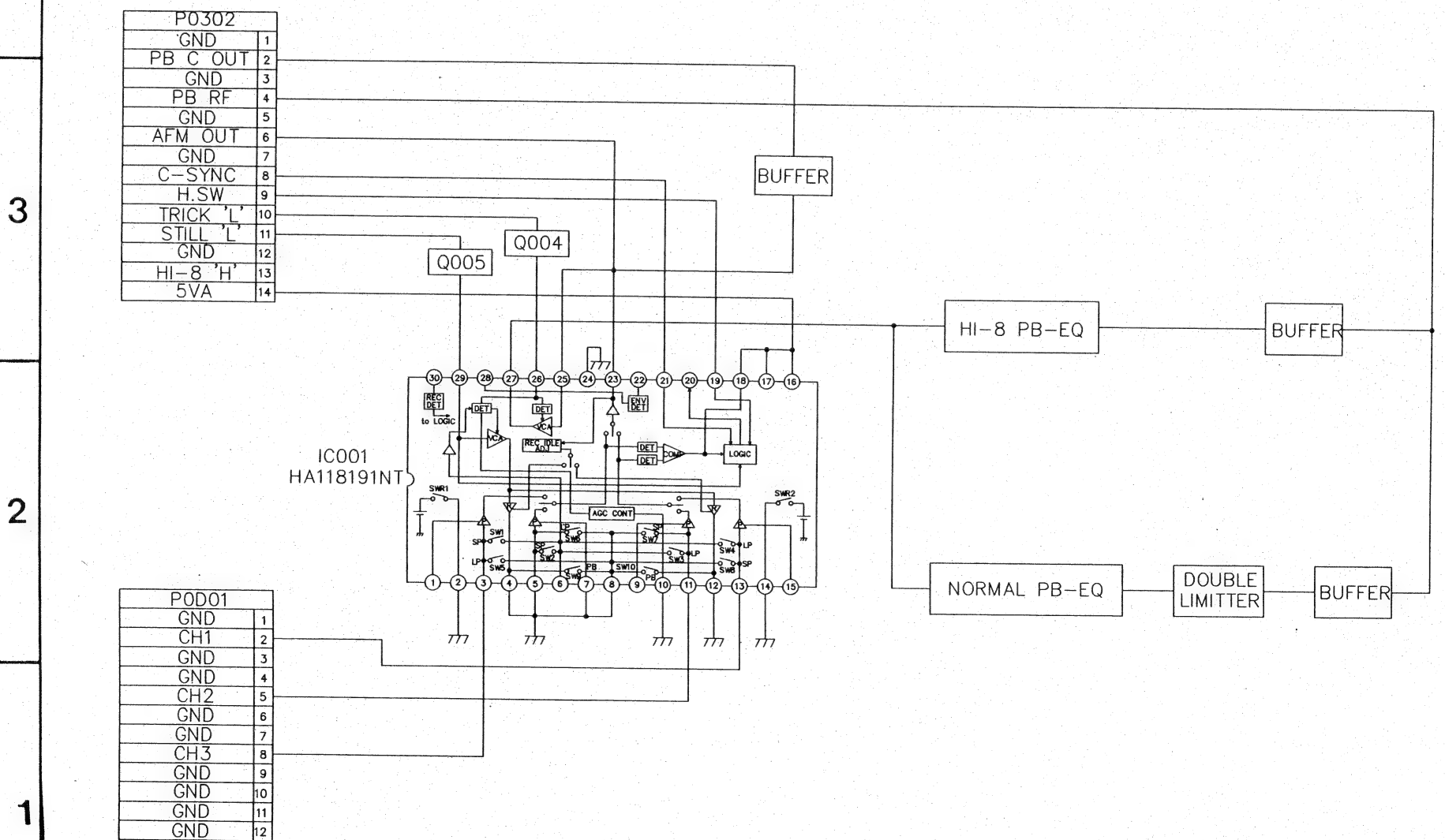
8

## 2-2. Audio Block Diagram



4

## 2-3. Pre-Amp Block Diagram



A

B

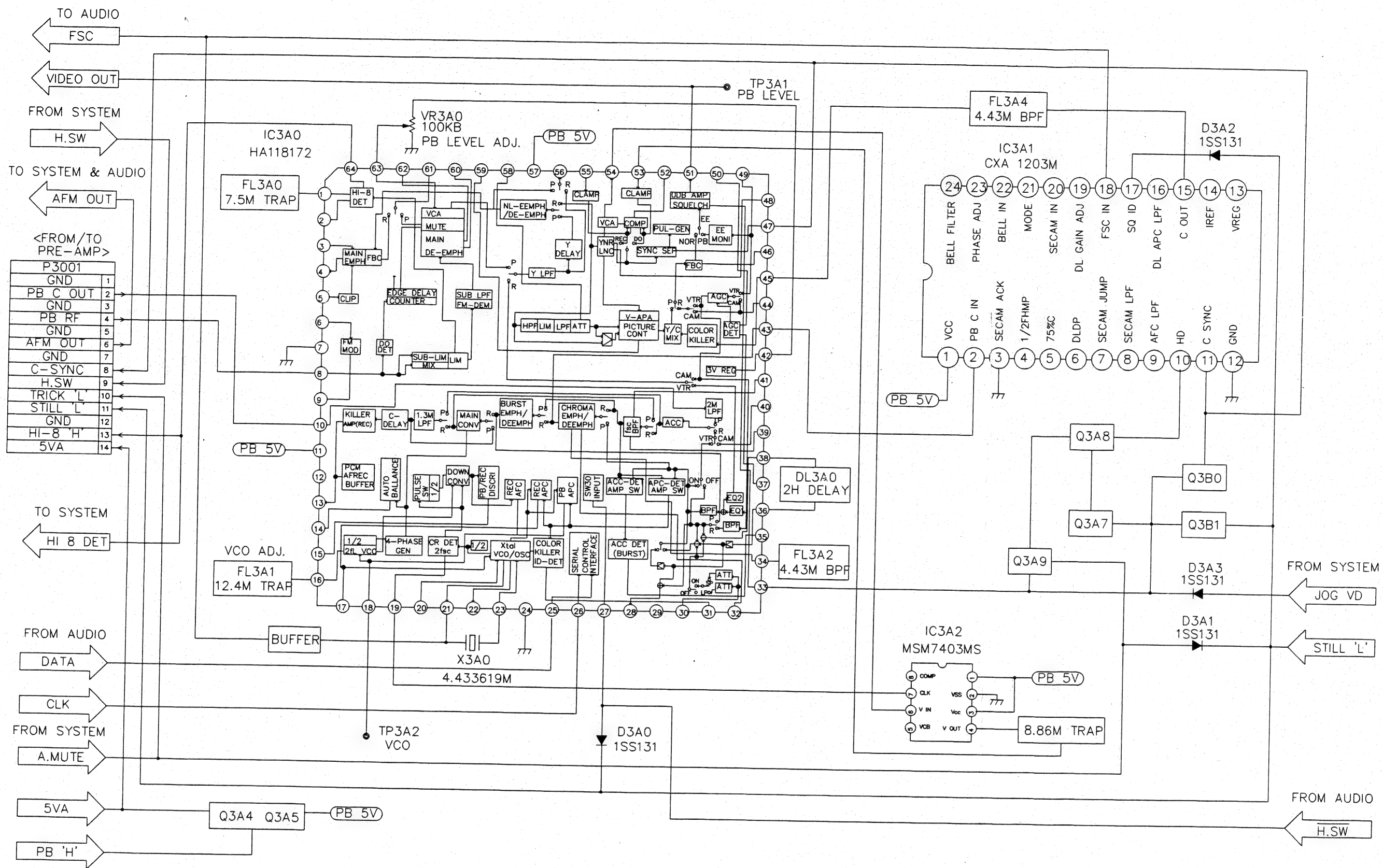
3-28

C

D

E

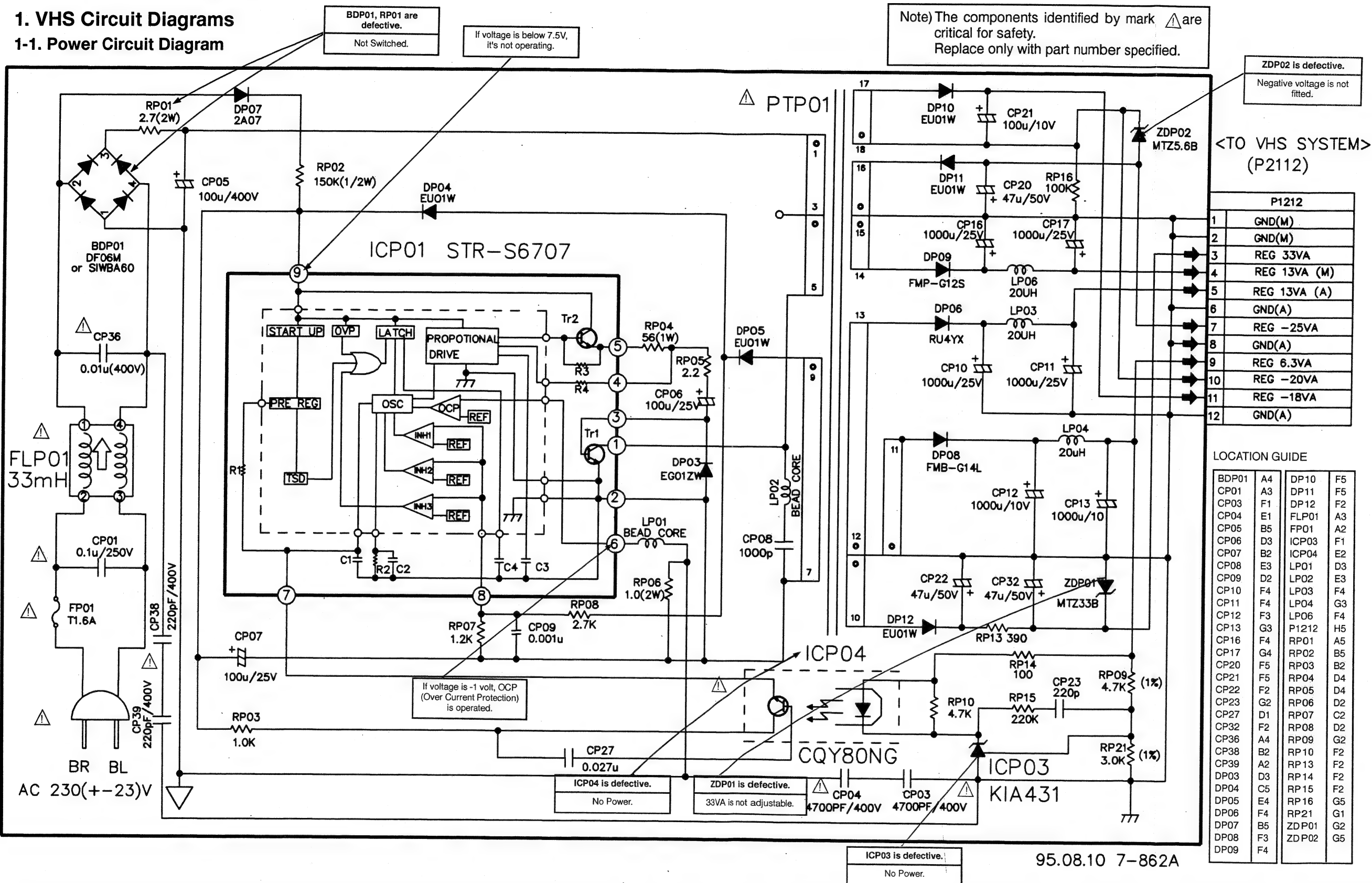
2-4. V/C Block Diagram



CIRCUIT DIAGRAMS

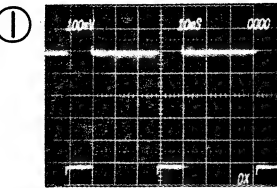
1. VHS Circuit Diagrams

1-1. Power Circuit Diagram

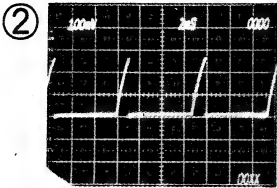




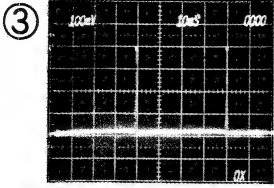
• VHS System Waveform



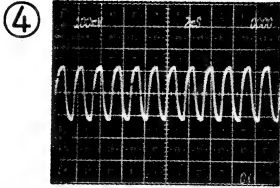
IC204 Pin ①  
Tracking Trigger  
(100mV/10msec)



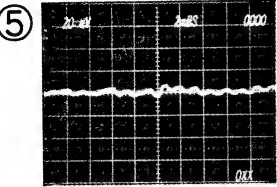
IC204 Pin ⑥  
PG Mono-Multi  
(100mV/2msec)



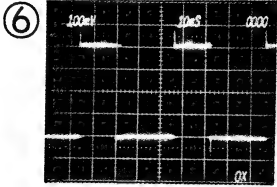
IC204 Pin ⑦  
PG Input  
(100mV/10msec)



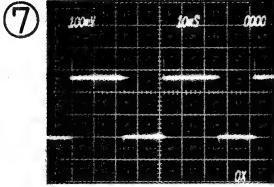
IC204 Pin ⑨  
Drum  
Frequency Generator  
Input (100mV/2msec)



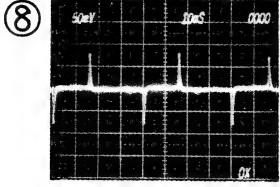
IC204 Pin ⑳  
Capstan Control  
(20mV/2msec)



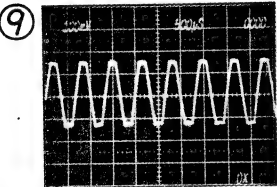
IC204 Pin ㉑  
Record Control (-)  
(100mV/10msec)



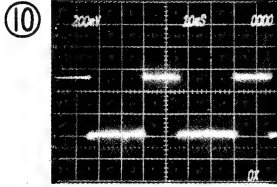
IC204 Pin ㉒  
Record Control (+)  
(100mV/10msec)



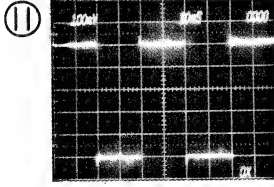
IC204 Pin ㉓  
Playback Control Pulse  
(50mV/10msec)



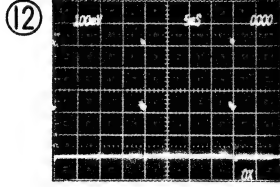
IC204 Pin ㉔  
Capstan Frequency Generator  
Input (100mV/500μsec)



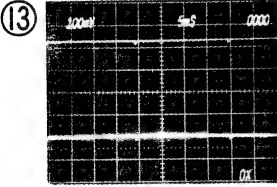
IC204 Pin ㉕  
Control Clock  
(200mV/10msec)



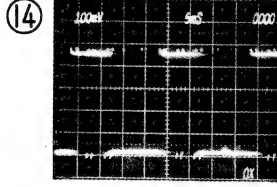
IC204 Pin ㉖  
Video Head Switching  
Pulse (100mV/10msec)



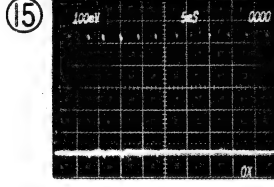
IC204 Pin ㉗  
Vertical Pulse (VP)  
(100mV/5msec)



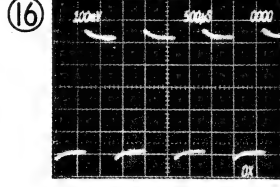
IC204 Pin ㉘  
C-SYNC Input terminal  
(100mV/5msec)



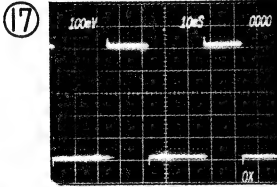
IC204 Pin ㉙  
Servo Data Input terminal  
(100mV/5msec)



IC204 Pin ㉚  
Servo Clock Input terminal  
(100mV/5msec)



IC204 Pin ㉛  
CFG (Capstan Frequency  
Generator) Count Down  
Output terminal  
(100mV/500μsec)



IC204 Pin ㉜  
Control Count Down  
Output terminal  
(100mV/10msec)

• VHS System IC Voltage Sheet

IC201 (M38185EEFP)

PB (REC) [V]

Pin No.	Voltage [V]	Pin No.	Voltage [V]	Pin No.	Voltage [V]
1	0.187 (0.20)	35	5.48 (5.46)	69	0.00 (0.00)
2	0.307 (4.67)	36	2.43 (2.40)	70	0.00 (0.00)
3	4.45 (4.53)	37	2.70 (2.71)	71	0.00 (0.00)
4	5.18 (5.25)	38	2.48 (2.50)	72	0.00 (0.00)
5	5.16 (5.23)	39	2.64 (2.66)	73	0.00 (0.00)
6	4.60 (4.60)	40	5.36 (0.00)	74	5.45 (5.45)
7	5.31 (5.30)	41	5.48 (5.46)	75	0.11 (0.11)
8	5.31 (5.32)	42	5.47 (5.46)	76	3.49 (3.47)
9	5.30 (5.32)	43	0.02 (5.46)	77	0.02 (0.00)
10	5.26 (5.23)	44	0.00 (0.00)	78	0.01 (0.69)
11	2.67 (2.61)	45	5.33 (0.00)	79	4.98 (5.13)
12	0.00 (0.00)	46	2.66 (5.27)	80	4.25 (4.32)
13	0.00 (0.00)	47	2.69 (2.70)	81	5.48 (5.45)
14	0.00 (0.00)	48	2.28 (5.33)	82	5.47 (0.00)
15	0.20 (0.20)	49	5.46 (5.43)	83	0.00 (5.36)
16	0.40 (0.40)	50	0.01 (0.00)	84	0.58 (5.43)
17	0.54 (0.55)	51	5.45 (0.00)	85	5.47 (5.43)
18	0.25 (0.24)	52	0.01 (1.86)	86	5.41 (5.37)
19	0.45 (0.20)	53	0.02 (5.43)	87	5.40 (5.38)
20	0.08 (0.20)	54	0.01 (5.45)	88	0.00 (0.00)
21	5.45 (5.46)	55	0.00 (0.00)	89	0.00 (0.00)
22	5.44 (5.16)	56	5.46 (0.00)	90	0.00 (0.00)
23	4.44 (0.00)	57	0.00 (5.46)	91	5.47 (3.53)
24	5.35 (5.34)	58	0.00 (0.00)	92	0.00 (0.00)
25	1.63 (1.20)	59	0.00 (0.00)	93	0.00 (0.00)
26	5.44 (5.43)	60	0.00 (0.00)	94	5.38 (5.37)
27	0.05 (0.26)	61	0.00 (5.44)	95	1.16 (0.42)
28	0.40 (0.30)	62	0.00 (5.44)	96	0.00 (0.00)
29	5.17 (0.00)	63	5.47 (5.45)	97	0.00 (0.10)
30	5.30 (5.30)	64	1.00 (1.00)	98	2.65 (0.22)
31	5.31 (5.30)	65	0.00 (0.00)	99	0.00 (0.00)
32	2.68 (2.68)	66	0.00 (0.00)	100	0.00 (0.00)
33	1.32 (0.55)	67	0.00 (0.00)		
34	2.28 (3.86)	68	0.00 (0.00)		

• VHS System TR Voltage Sheet

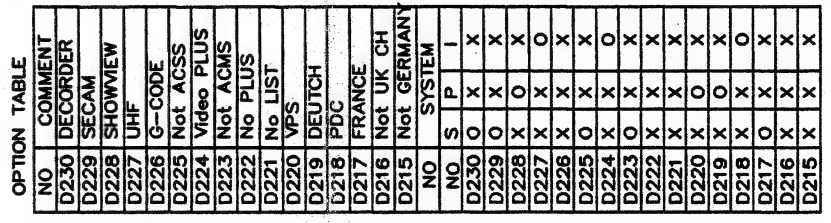
(PB/REC mode)

Port	Emitter	Collector	Base
Q202	0.00/0.00	1.33/0.00	0.00/0.00
Q203	0.00/0.00	0.00/0.00	5.40/5.34
Q204	0.64/0.64	5.28/5.23	0.98/0.96
Q205	0.65/0.65	1.32/1.33	0.00/1.23
Q206	0.00/0.00	5.29/5.28	0.00/0.00
Q208	0.00/0.00	2.71/2.69	0.00/0.00
Q209	5.32/5.28	1.13/1.15	5.41/5.37
Q210	5.29/5.28	1.15/1.15	5.41/5.37
Q211	5.12/5.10	2.72/2.70	5.40/5.37
Q212	0.00/0.00	0.12/0.12	0.64/0.64
Q213	0.92/0.95	3.60/3.59	1.47/1.46
Q217	0.00/0.00	5.19/5.20	4.83/4.80
Q218	0.00/0.00	0.00/4.77	4.80/4.77
Q221	0.00/0.00	0.00/0.00	5.40/5.40
Q222	6.13/6.12	5.92/5.90	0.00/5.34
Q223	0.00/0.00	0.10/0.10	5.39/5.37
Q224	13.34/13.33	13.25/13.23	8.51/0.00
Q225	0.92/0.95	3.60/3.59	1.47/1.46

PB (REC)

2	2.5	0.7	1.1	3.8	5	0.2	0	0	0	2.5	2.5	2.5	2.6	2.6	2.6	0	5	2	5	2.4	2.5	2.5	2.5	2.5	2.5	0	2.5	2.5
(5)	(2.5)	(0.7)	(1.1)	(3.8)	(5)	(0.9)	(0)	(0)	(0)	(2.5)	(0)	(2.5)	(2.6)	(2.6)	(2.6)	(0)	(5)	(3.6)	(5)	(2.4)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(0)	(2.7)	(2.1)
55 50 45 40 35 30																												
IC204 (HD49756NT)																												
1 5 10 15 20 25																												
3.6	0	0	5	0	0.2	2.1	0	2.7	2.7	2.7	1.4	2.5	2.5	2.5	2.5	2.5	2.4	0	2.5	2.5	2.5	2.5	2.5	2.5	2.7	2.7	5	
(3.6)	(0)	(0)	(5)	(0)	(0.2)	(2.1)	(0)	(2.7)	(2.7)	(2.7)	(1.4)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.4)	(0)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.6)	(2.7)	(5)	

**No Power.**  
Loading Motor not operating.





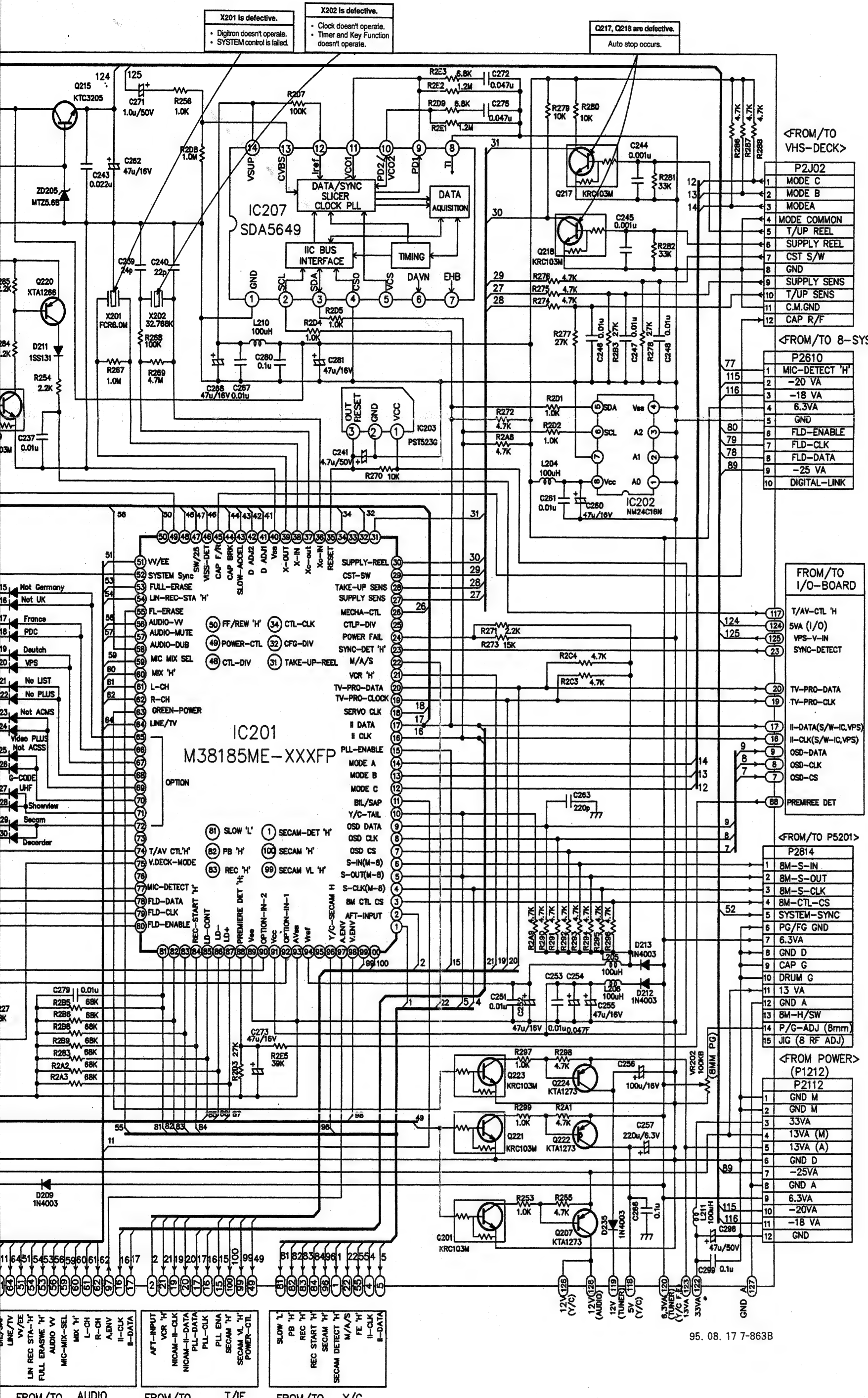
X201 is defective.  
 • Digitron doesn't operate.  
 • SYSTEM control is failed.

X202 is defective.  
 • Clock doesn't operate.  
 • Timer and Key Function doesn't operate.

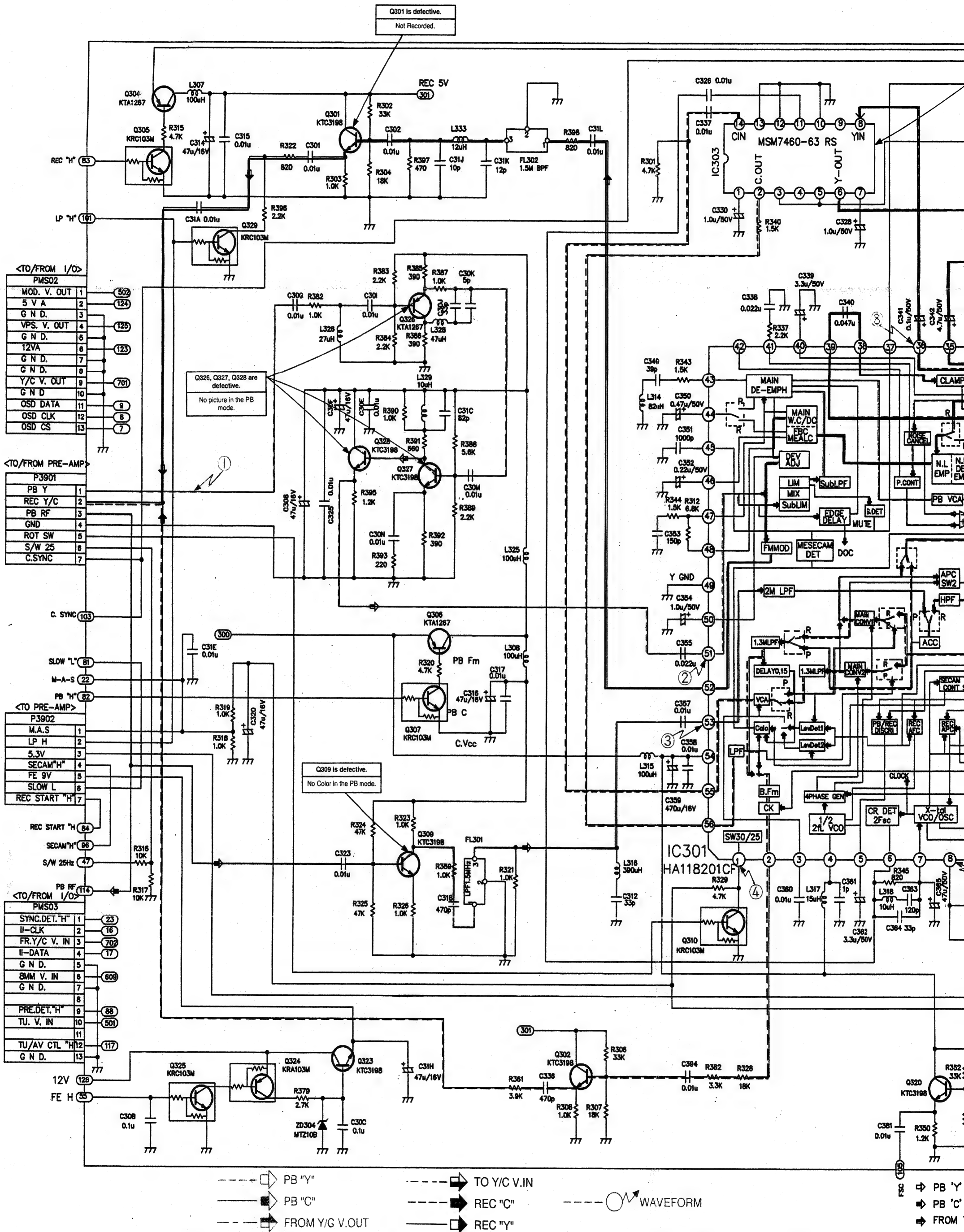
Q217, Q218 are defective.  
 Auto stop occurs.

# LOCATION GUIDE

C201	C10	D235	O2	R271
C202	C10	IC201	K6	R272
C203	C11	IC202	O8	R273
C204	D10	IC203	M9	R274
C205	D10	IC204	C7	R275
C206	E10	IC205	D12	R276
C207	F11	IC206	F11	R277
C208	F10	IC207	K10	R278
C209	G8	L201	C10	R279
C210	G8	L203	H2	R280
C211	G8	L204	N8	R281
C212	G8	L205	O4	R282
C213	G8	L206	O4	R283
C214	H8	L207	H4	R284
C215	H8	L208	D10	R285
C216	H9	L210	L10	R286
C217	C5	L211	P2	R287
C218	D5	L212	H2	R288
C219	D5	P2112	P3	R289
C220	E5	P2610	P9	R290
C221	E5	P2814	P5	R291
C222	E5	P2J01	A4	R292
C223	F5	P2J02	P11	R293
C224	F5	P2J03	A10	R294
C225	G4	Q201	M2	R295
C226	G4	Q202	G9	R296
C227	E9	Q203	H11	R297
C228	F9	Q204	D4	R298
C229	F9	Q205	D4	R299
C230	H5	Q206	F4	R2A1
C231	H5	Q207	N2	R2A2
C232	E3	Q208	C3	R2A3
C233	G3	Q209	D3	R2A7
C234	G3	Q210	E3	R2A8
C235	G3	Q211	F3	R2A9
C236	H3	Q212	H3	R2B3
C237	I9	Q213	F9	R2B5
C238	H10	Q215	J11	R2B6
C239	J10	Q217	N11	R2B8
C240	K10	Q218	N10	R2B9
C241	L9	Q219	I9	R2C3
C242	I11	Q220	J10	R2C4
C243	J11	Q221	N3	R2D1
C244	O11	Q222	N3	R2D2
C245	O10	Q223	N4	R2D3
C246	O9	Q224	N3	R2D4
C247	O9	R200	E8	R2D5
C248	O9	R201	C10	R2D7
C249	H4	R202	D11	R2D8
C250	G4	R203	D10	R2D9
C251	N4	R204	D10	R2E1
C252	N4	R205	E11	R2E2
C253	N4	R206	E10	R2E3
C254	N4	R207	F9	R2E5
C255	O4	R208	C5	VR201
C256	O4	R209	D5	VR202
C257	O3	R210	D5	X201
C258	C4	R211	E5	X202
C259	G3	R212	E4	ZD201
C260	O8	R213	D4	ZD205
C261	N8	R214	C4	
C262	J11	R215	F3	
C263	N6	R216	E4	
C264	H10	R217	E5	
C265	O2	R218	E5	
C266	K9	R219	F5	
C267	J11	R220	F5	
C268	N12	R221	F5	
C269	K4	R222	F4	
C270	N11	R223	D3	
C271	C8	R224	E3	
C272	D8	R225	G4	
C273	J4	R226	I4	
C274	L9	R227	I4	
C275	L9	R228	H4	
C276	L9	R229	G4	
C277	P2	R230	H4	
C278	P2	R231	I2	
C279	G3	R232	F9	
C280	G5	R233	F9	
C281	H5	R234	F4	
C282	H5	R235	F5	
C283	H5	R236	G5	
C284	H5	R237	G5	
C285	J3	R238	G5	
C286	J9	R239	H5	
C287	O4	R240	H5	
C288	O5	R241	G5	
C289	I7	R242	E9	
C290	I7	R243	I2	
C291	I7	R244	G8	
C292	I7	R245	G8	
C293	I7	R246	G9	
C294	I7	R247	G8	
C295	I7	R248	G9	
C296	I7	R249	H8	
C297	I6	R250	G10	
C298	I6	R251	N3	
C299	I6	R252	N3	
C300	I6	R253	K11	
C301	I6	R254	I11	
C302	I6	R255	J9	
C303	I6	R256	K9	
C304	I6	R257	M8	
C305	I6	R258		
C306	I6	R259		
C307	I6	R260		
C308	I6	R261		
C309	I6	R262		
C310	I6	R263		
C311	I6	R264		
C312	I6	R265		
C313	I6	R266		
C314	I6	R267		
C315	I6	R268		
C316	I6	R269		
C317	I6	R270		



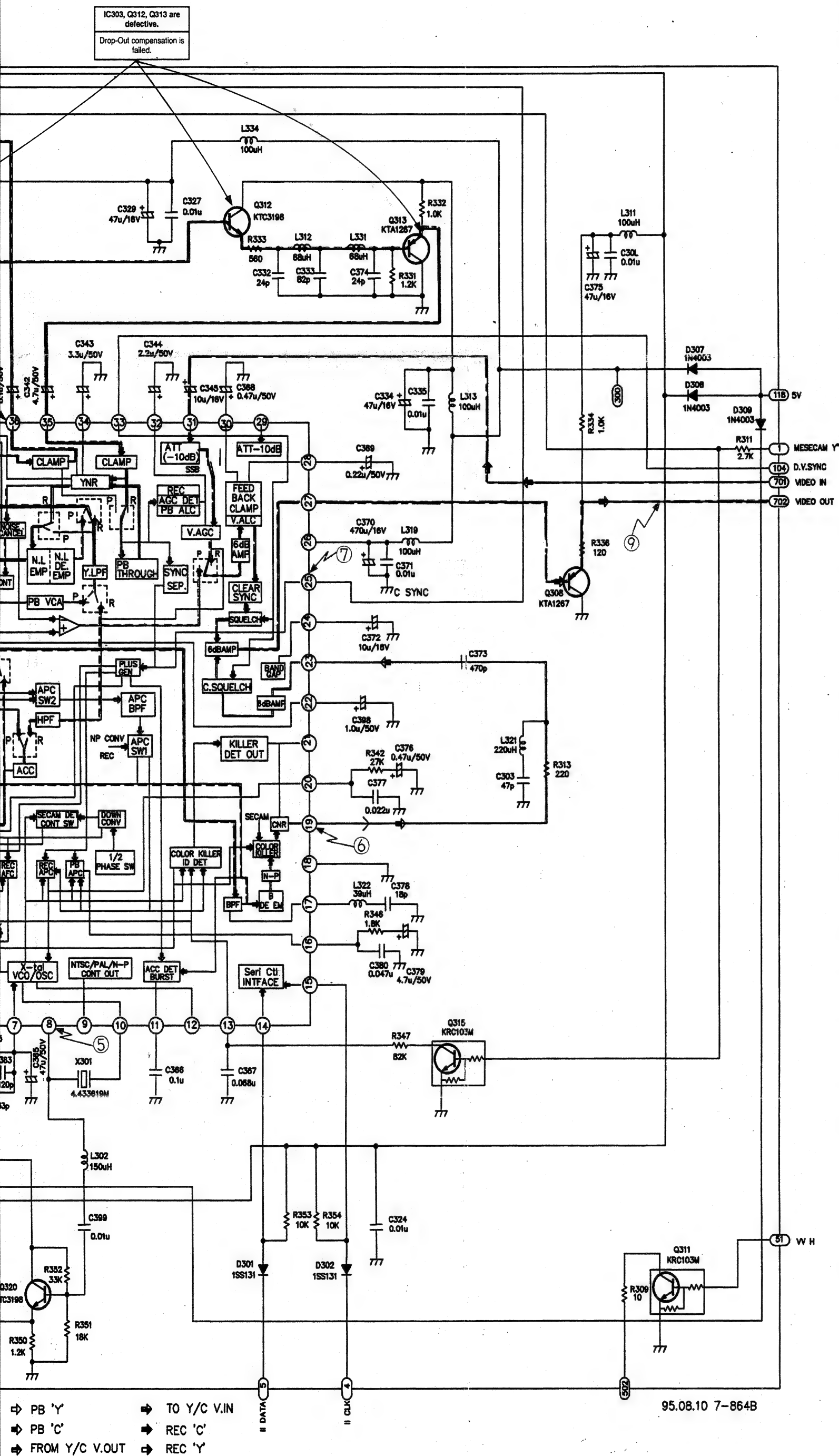
# 1-3. Y/C Circuit Diagram



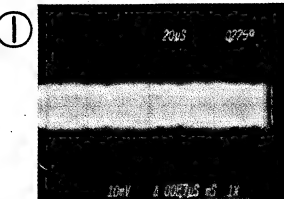


# LOCATION GUIDE

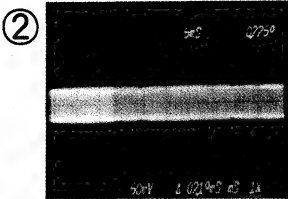
C301	D10	L319	M7
C302	D10	L321	N6
C303	N6	L322	M5
C308	C7	L325	F6
C30B	B2	L326	D8
C30C	D1	L328	E8
C30E	D8	L329	E8
C30F	D8	L331	M10
C30G	C9	L333	E10
C30I	D9	L334	L10
C30J	E9	P3901	A7
C30K	E9	P3902	A5
C30L	O9	PMS02	A9
C30M	E7	PMS03	A3
C30N	D7	Q301	D10
C312	G3	Q302	F2
C314	B10	Q304	B10
C315	C10	Q305	B10
C316	E5	Q306	E6
C317	E5	Q307	E5
C318	E3	Q308	N7
C31A	B9	Q309	E4
C31C	E8	Q310	G3
C31E	C6	Q311	P2
C31H	E2	Q312	L10
C31J	E10	Q313	M10
C31K	E10	Q315	M3
C31L	F10	Q320	J2
C320	C5	Q323	D2
C323	D4	Q324	C2
C324	M2	Q325	B2
C325	D7	Q326	E9
C326	G11	Q327	E7
C327	K10	Q328	D7
C328	I9	Q329	C9
C329	K10	R301	G10
C330	H9	R302	D10
C332	L9	R303	D10
C333	L9	R304	D10
C334	M8	R306	G2
C335	M9	R307	F2
C336	F2	R308	F2
C337	G10	R309	O2
C338	H9	R311	P8
C339	H9	R312	G7
C340	I9	R313	N6
C341	I9	R315	B10
C342	J9	R316	B4
C343	J9	R317	B4
C344	K9	R318	C5
C345	K9	R319	C5
C349	G8	R320	E5
C350	G8	R321	F4
C351	G8	R322	C10
C352	G7	R323	E4
C353	G7	R324	D4
C354	G6	R325	D3
C355	G6	R326	E3
C357	G5	R328	H2
C358	G5	R329	H4
C359	G4	R331	M9
C360	H4	R332	M10
C361	I4	R333	L10
C362	I3	R334	O8
C363	J4	R336	O7
C364	I3	R337	H8
C365	J3	R340	H9
C366	K3	R342	M6
C367	L3	R343	G8
C368	L9	R344	G7
C369	M8	R345	I4
C370	M8	R346	M5
C371	M7	R347	M4
C372	M7	R350	J1
C373	N7	R351	J2
C374	N7	R352	J2
C375	N10	R353	L2
C376	M6	R354	L2
C377	M6	R359	E4
C378	M5	R361	F2
C379	M4	R362	H2
C380	M4	R379	D2
C381	I1	R382	D9
C394	G2	R383	D8
C398	M6	R384	D9
C399	J2	R385	E9
D301	L2	R386	E8
D302	L2	R387	E9
D307	O9	R388	E7
D308	O9	R389	E7
D309	P8	R390	D8
FL301	E4	R391	E7
IC301	G4	R392	E7
IC303	H10	R393	D6
L302	J3	R395	D7
L307	B11	R396	C9
L308	F6	R397	E10
L311	O10	R398	F10
L312	L10	X301	J4
L313	M8	ZD304	D1
L314	G8		
L315	G5		
L316	G4		
L317	I4		
L318	I4		



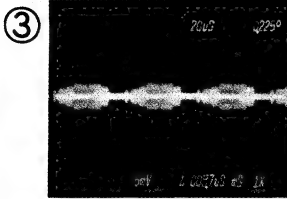
• VHS Y/C Waveform



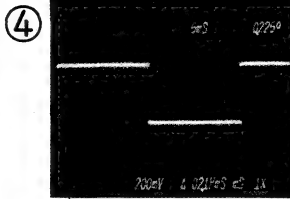
P3901 Pin 1  
(10mV/20μsec)



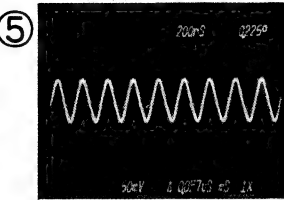
IC301 Pin 51  
(50mV/5msec)



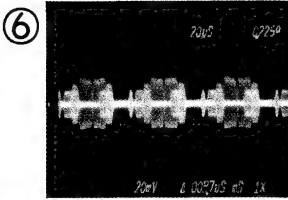
IC301 Pin 53  
(5mV/20μsec)



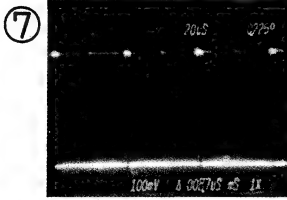
IC301 Pin 1  
(200mV/5msec)



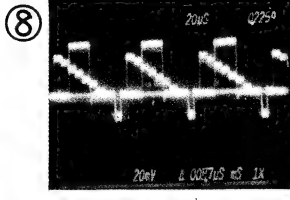
IC301 Pin 8  
(50mV/200nsec)



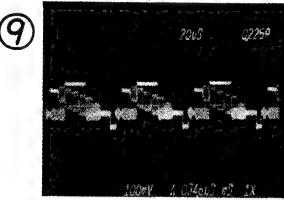
IC301 Pin 19  
(20mV/20μsec)



IC301 Pin 25  
(100mV/20μsec)



IC301 Pin 36  
(20mV/20μsec)



Video Out Terminal  
(100mV/20μsec)

• VHS Y/C TR Voltage Sheet

(PB/REC mode)

Port	Emitter	Collector	Base
Q301	0/1.09	0/4.9	0/1.66
Q308	2.97/2.21	0/0	0.02/0.1
Q312	0.04/3.4	4.89/0.04	3.66/0.05
Q313	1.51/1.7	0/0	2.14/2.28
Q326	3.15/0	1.76/0	2.49/0
Q327	1.34/0	2.57/0	0.74/0
Q328	1.97/0	4.9/0	2.58/0

• VHS Y/C IC Voltage Sheet

PB (REC)

	0.32 (0.05)	0.27 (0.05)	1.62 (0.06)	0.28 (2.27)	0.1 (2.88)	0.21 (0.27)	2.43 (2.21)	3.08 (0)	1.42 (1.46)	0.06 (0)	1.70 (2.23)	3.01 (3.02)	2.8 (3.06)	3.03 (3.05)	
0 (1.9)	40				35				30				2.79 (2.28)		
2.72 (2.77)													2.38 (1.62)		
0.08 (0)	45												4.7 (4.67)		
1.88 (1.93)													0.39 (0.39)		25
1.43 (2.04)													0.02 (2.84)		
1.44 (0.04)													1.94 (1.95)		
0.01 (0)													4.62 (4.6)		
0.01 (1.9)	50												0.13 (4.54)		
2.79 (0.87)													0.25 (2.7)		20
4.23 (0.04)													2.14 (2.13)		
0.08 (2.15)													0 (0.07)		
0.08 (4.8)													2.86 (0.08)		
4.82 (2.89)	55												2.80 (0.09)		
4.06 (4.01)	1				5				10				4.73 (4.75)		15
2.44 (0.07)	0 (2.12)	3.57 (3.48)	4.86 (4.81)	2.79 (2.96)	2.82 (2.8)	2.83 (2.8)	2.17 (2.16)	0.09 (0.08)	3.20 (3.2)	2.25 (2.22)	2.216 (2.16)	1.29 (2.42)	4.73 (4.6)		

PB (REC)

Port	Emitter	Collector	Base
Q301	0/1.09	0/4.9	0/1.66
Q308	2.97/2.21	0/0	0.02/0.1
Q312	0.04/3.4	4.89/0.04	3.66/0.05
Q313	1.51/1.7	0/0	2.14/2.28
Q326	3.15/0	1.76/0	2.49/0
Q327	1.34/0	2.57/0	0.74/0
Q328	1.97/0	4.9/0	2.58/0

# 1-4. Timer/Key Function Circuit Diagram

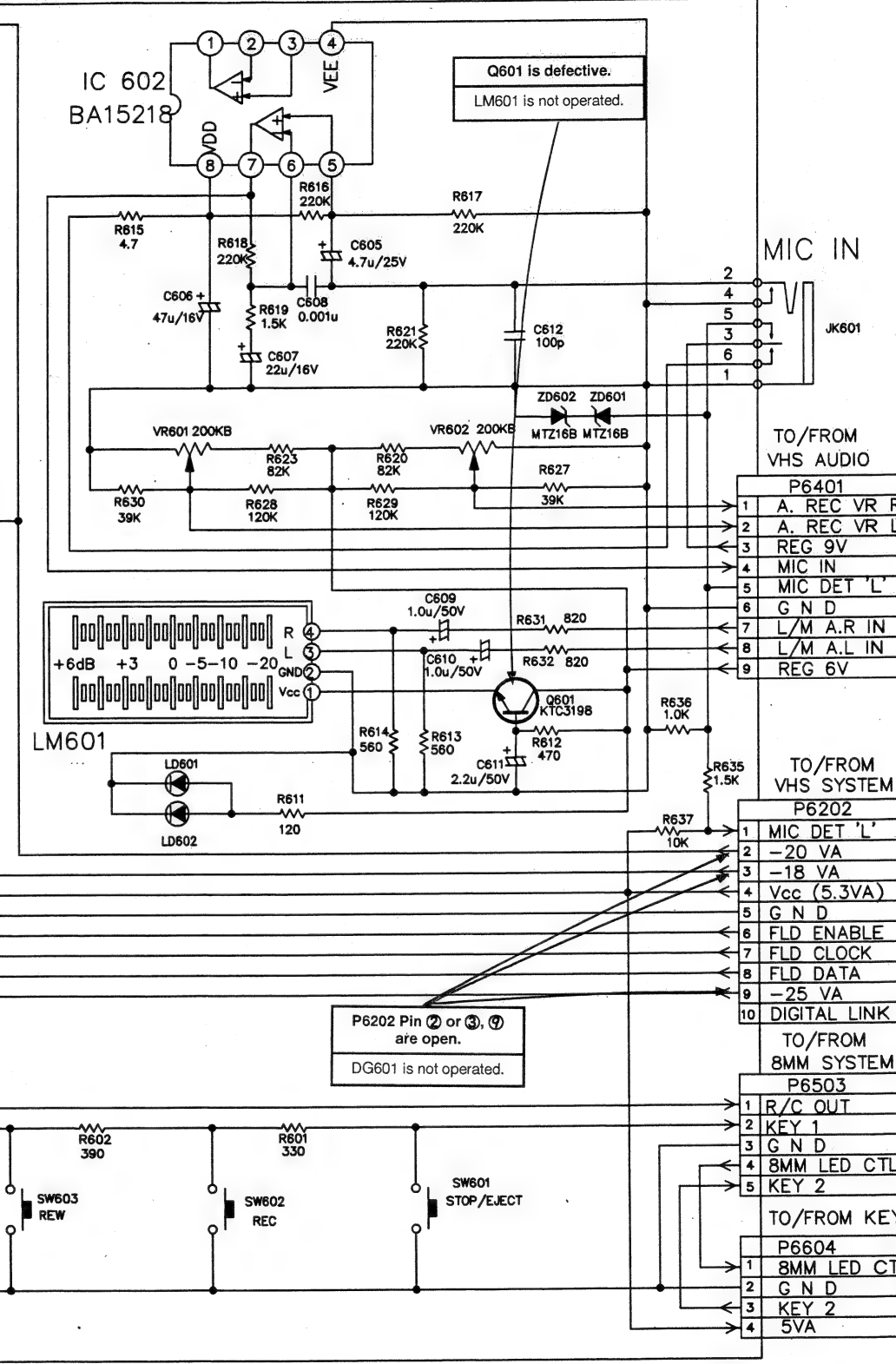
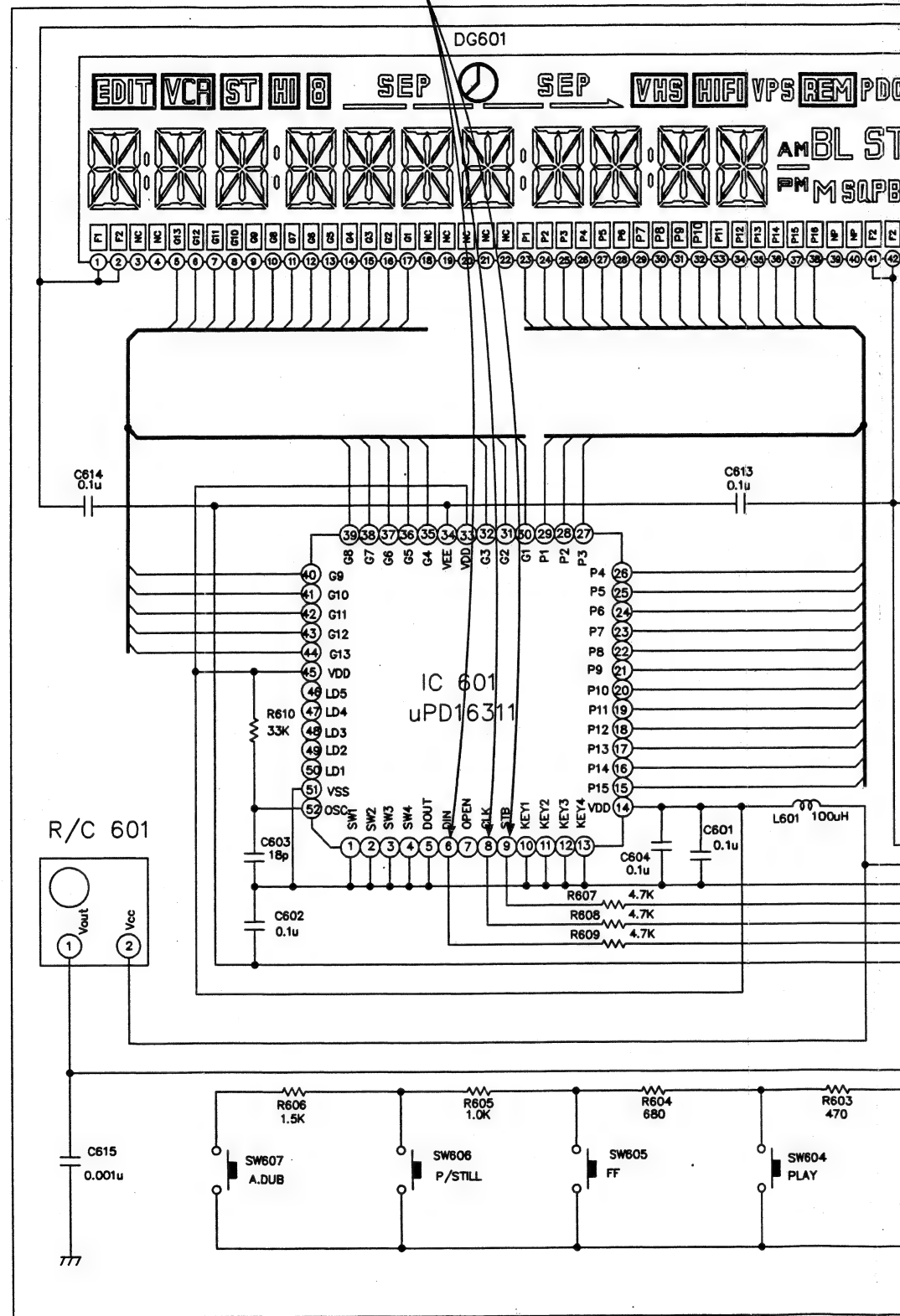
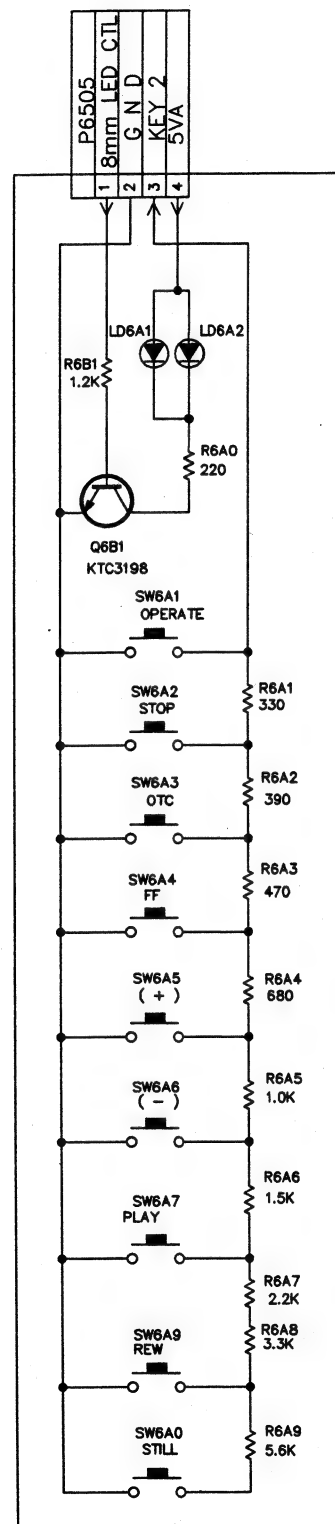
## \* Timer IC Voltage Sheet IC601 (μPD16311)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Voltage	0.0	0.0	0.0	0.0	0.0	0.8	6.1	4.9	4.3	0.0	0.0	0.0	0.0	6.1	-11.7	-22.7	-20.6	-24.8	-26.9	-26.9	-20.2	-22.7	-22.6	-18.4	-20.5	-24.8
Pin No.	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
Voltage	3.3	0.0	6.1	6.1	6.1	6.1	6.1	6.1	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0	-25.0	-27.3	6.1	-25.0	-25.1	-25.0	-22.8	-27.1	-22.9

IC601 Pin ⑥, ⑧, ⑨ are open.  
DG601 is not operated.

TIMER

KEYBOARD



LOCATION GUIDE

C601	F3
C602	D3
C603	D3
C604	E3
C605	H6
C606	H6
C607	H6
C608	I6
C609	I5
C610	I4
C611	I4
C612	J6
C613	F5
C614	C5
C615	C2
C616	G5
IC602	H7
JK601	K6
LD601	F3
LD602	H4
LD6A1	H3
LD6A2	A6
Q601	B6
Q6B1	A5
RC601	B3
R601	H2
R602	G2
R603	F2
R604	F2
R605	E2
R606	D2
R607	E3
R608	E3
R609	E3
R610	D4
R611	H4
R612	J4
R613	I4
R614	I4
R615	H6
R616	I7
R617	I7
R618	H6
R619	H6
R620	I5
R621	I6
R622	H5
R623	H5
R624	H5
R625	H5
R626	H5
R627	J5
R628	H5
R629	I5
R630	H5
R631	J4
R632	J4
R633	K4
R634	J4
R635	J4
R636	J3
R637	J3
R638	J3
R639	J3
R640	B5
R641	B4
R642	B4
R643	B4
R644	B3
R645	B3
R646	B2
R647	B2
R648	B2
R649	B1
R650	A6
SW601	I2
SW602	H2
SW603	G2
SW604	F2
SW605	E2
SW606	D2
SW607	C2
SW608	A1
SW609	A5
SW6A1	A4
SW6A2	A4
SW6A3	A4
SW6A4	A4
SW6A5	A3
SW6A6	A3
SW6A7	A2
SW6A8	A2
SW6A9	A2
VR601	H5
VR602	I5
ZD601	J6
ZD602	J6

95.08.10 7-866A



# 1-5. Audio Circuit Diagram

\* VHS Audio IC Voltage Sheet

PB (REC)									
34	0	34	34	42	0	4	4	1	
(3.4)	(0)	(3.4)	(3.4)	(4.2)	(0)	(4.1)	(4.1)	(0)	(4.2)
10									
1	5	15							
(0)	(0)	(0.5)	(0.5)	(0)	(0)	(0.2)	(0.2)	(0.2)	(0)
(0)	(0.2)	(0.5)	(0.5)	(0)	(0)	(0.2)	(0.2)	(0.2)	(0)

PB (REC)									
44	44	44	44	5	5	5	5	5	5
(4.4)	(4.4)	(4.4)	(4.4)	(5)	(5)	(5)	(5)	(5)	(5)
60									
55	55	50	45	40	35				
(5.5)	(5.5)	(5.0)	(4.5)	(4.0)	(3.5)				

IC401 (BA7790LS)

IC402 (TA8813AN)

<FROM/TO PRE-AMP>

P4904	1
SW 25	2
GND	3
AUDIO REC FM	4
AUDIO PB FM	5

Hi-Fi AUDIO BLOCK

FROM Y/C  
4.43MHZ (105)

Q406, Q407 short.  
Hi-Fi & Normal Audio mixing is unstable.

VR401, VR402 short.  
No Hi-Fi Audio Signal.  
C496, C497 short.  
No SCI Audio signal.  
IC403 is defective.  
Input, Output Matrix switching is failed.

TO/FROM TIMER

P4601	1
AUDIO REC VR R	2
AUDIO REC VR L	3
REG 9V	4
MIC	5
GND	6
GND	7
LEVEL METER R	8
LEVEL METER L	9
REG 6V	10

<FROM TUNER/IF>

TUNER A(R).IN402

TUNER A(L).IN403

TO/FROM I/O

PMS01	1
Fr EURO2 R	2
GND	3
Fr EURO2 L	4
Fr EURO1 R	5
GND	6
Fr EURO1 L	7
TO EURO2 R	8
GND	9
TO EURO2 L	10
GND	11
TO EURO1 R	12
GND	13

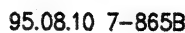
<SYSTEM>

13VA (123)

EE MODE (NORMAL) ———> Hi-Fi REC ———> Hi-Fi PB  
EE MODE (HI-FI "L") ———> NORMAL REC ———> NORMAL PB

Q401, Q402 short.  
Hi-Fi Audio signal mute.  
Q403 short.  
Modulator defect.



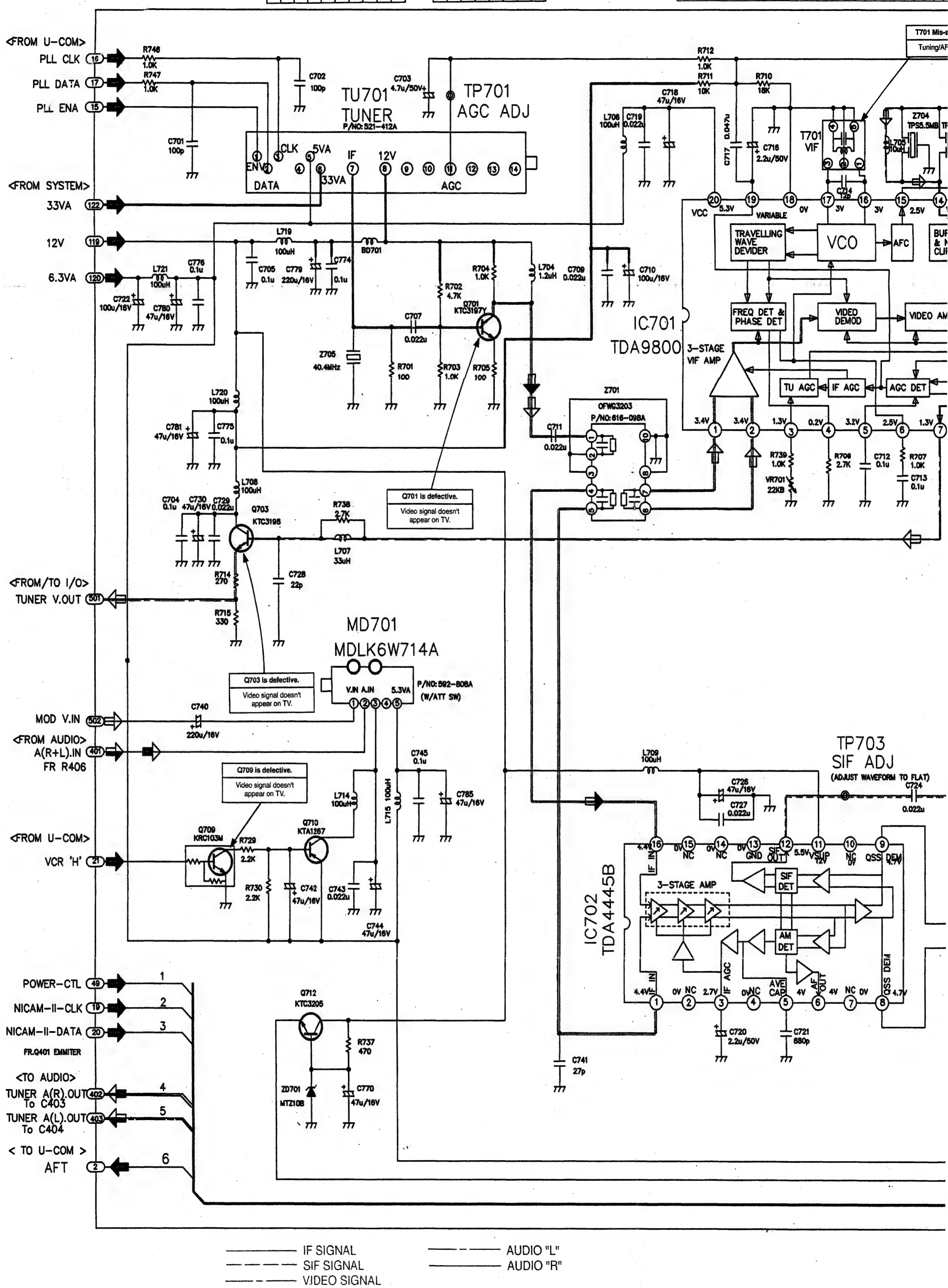


### \* Tuner/IF IC Voltage Sheet

5.1	3.1	0	2.8	2.8	2.5	2.0	2.0	4.3	2.7
20			15						
IC701 (TDA9802)									
1		5					10		
3.4	3.4	1.3	0.2	3.2	2.5	1.3	3.3	2.0	1.8

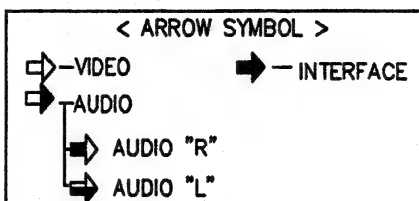
4.7	0	0	0	4.4	12.8	0	5
15				10			
<b>IC702 (TDA4445B)</b>							
1		5					
4.7	0	2.7	0	4.1	3.7	0	5

D	2.5	2.5	0	D	1.6	1.6	5.5	0	4	2.7	4	4	0	4	0	7	4	0	4	4	4	4	4	3.9	0	8	8	7	4		
					60						55						50						45						40		
IC704 (MSP3410)																															
1					5					10					15					20					25						
2.5	0	0	0	D	0	0	5.4	0	0.3	0.3	2.4	2.4	2.4	2.5	2.5	2.5	1.4	1.4	1.4	1.4	0	2.6	5	5	5	5	5.4	2	2	0	0



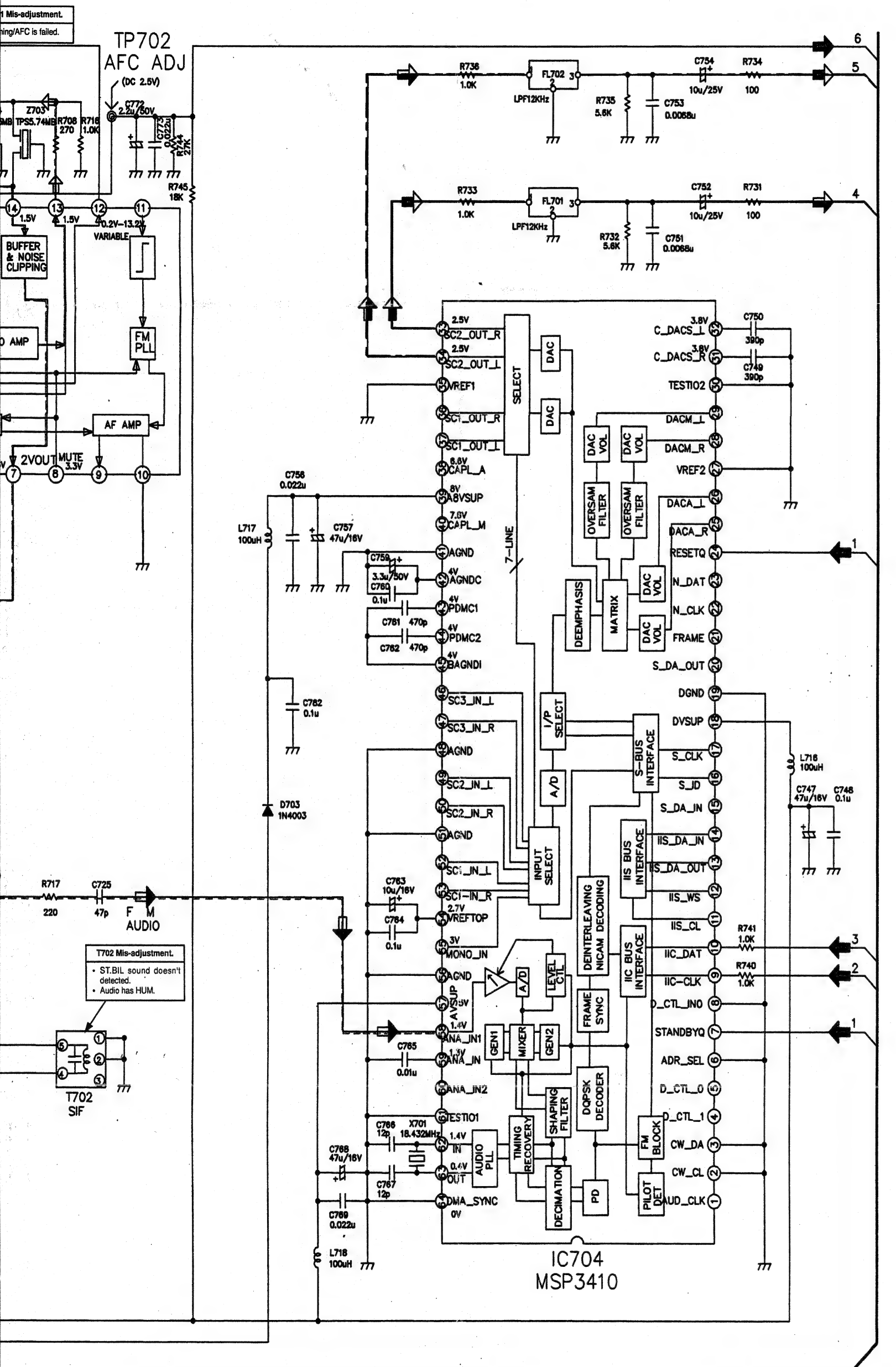
EE	7	4	0	4	4
35					
30					
2	0	0	0	3	9

• Tuner/IF TR Voltage Sheet					EE mode
Port	Emitter	Collector	Base		
Q701	2.2	13	3		
Q703	1.2	13	1.8		



# LOCATION GUIDE

BD701	D9	R714	C6
C701	B10	R715	C10
C702	C11	R716	J5
C703	D11	R717	C4
C704	B7	R729	C4
C705	C9	R730	O10
C707	D9	R731	O10
C709	F9	R732	N9
C710	G9	R733	M10
C711	F8	R734	O11
C712	I7	R735	N10
C713	I7	R736	M11
C714	H10	R737	D3
C716	H10	R738	D7
C717	G10	R739	H7
C718	G10	R740	O4
C719	F10	R741	O4
C720	G3	R744	K10
C721	H3	R745	K10
C722	B9	R746	B11
C724	I5	R747	B11
C725	J5	T701	H10
C726	G5	T702	J3
C727	G5	TP701	E10
C728	C6	TP702	J11
C729	C7	TP703	H5
C730	B7	TU701	D10
C740	B5	VR701	H7
C741	F2	X701	M3
C742	C4	Z701	F8
C743	D4	Z703	I10
C744	D4	Z704	I10
C745	D5	Z705	D8
C747	P5	ZD701	C2
C748	P5		
C749	O8		
C750	O9		
C751	O9		
C752	O10		
C753	O10		
C754	O11		
C756	L8		
C757	L7		
C759	L7		
C760	L7		
C761	L7		
C762	L6		
C763	L5		
C764	L4		
C765	L4		
C766	L3		
C767	L3		
C768	L3		
C769	L2		
C770	D2		
C772	J10		
C773	K10		
C774	D9		
C775	C8		
C776	B9		
C779	C9		
C780	B9		
C781	B8		
C782	L6		
C785	E5		
D703	L5		
FL701	N10		
FL702	N10		
IC701	G8		
IC702	F3		
IC704	N2		
L704	F9		
L705	I10		
L706	F10		
L707	D7		
L708	C7		
L709	G5		
L714	D5		
L715	D4		
L716	P6		
L717	K7		
L718	L2		
L719	C9		
L720	C8		
L721	B9		
MD701	D6		
Q701	E9		
Q703	C7		
Q709	B4		
Q710	C4		
Q712	C3		
R701	D8		
R702	E9		
R703	E8		
R704	E8		
R705	E8		
R706	H7		
R707	I7		
R708	H10		
R710	H11		
R711	G11		
R712	G11		



< THE CONDITION OF IC PIN VOLTAGE : EE MODE >

THE VOLTAGE IS SUBJECT TO CHANGE A LITTLE ACCO. TO INPUT CONDITION.

95. 08. 17 7-867B



# 1-7. Scart In/Out & Function OSD Circuit Diagram

\* In/Out IC Voltage Sheet

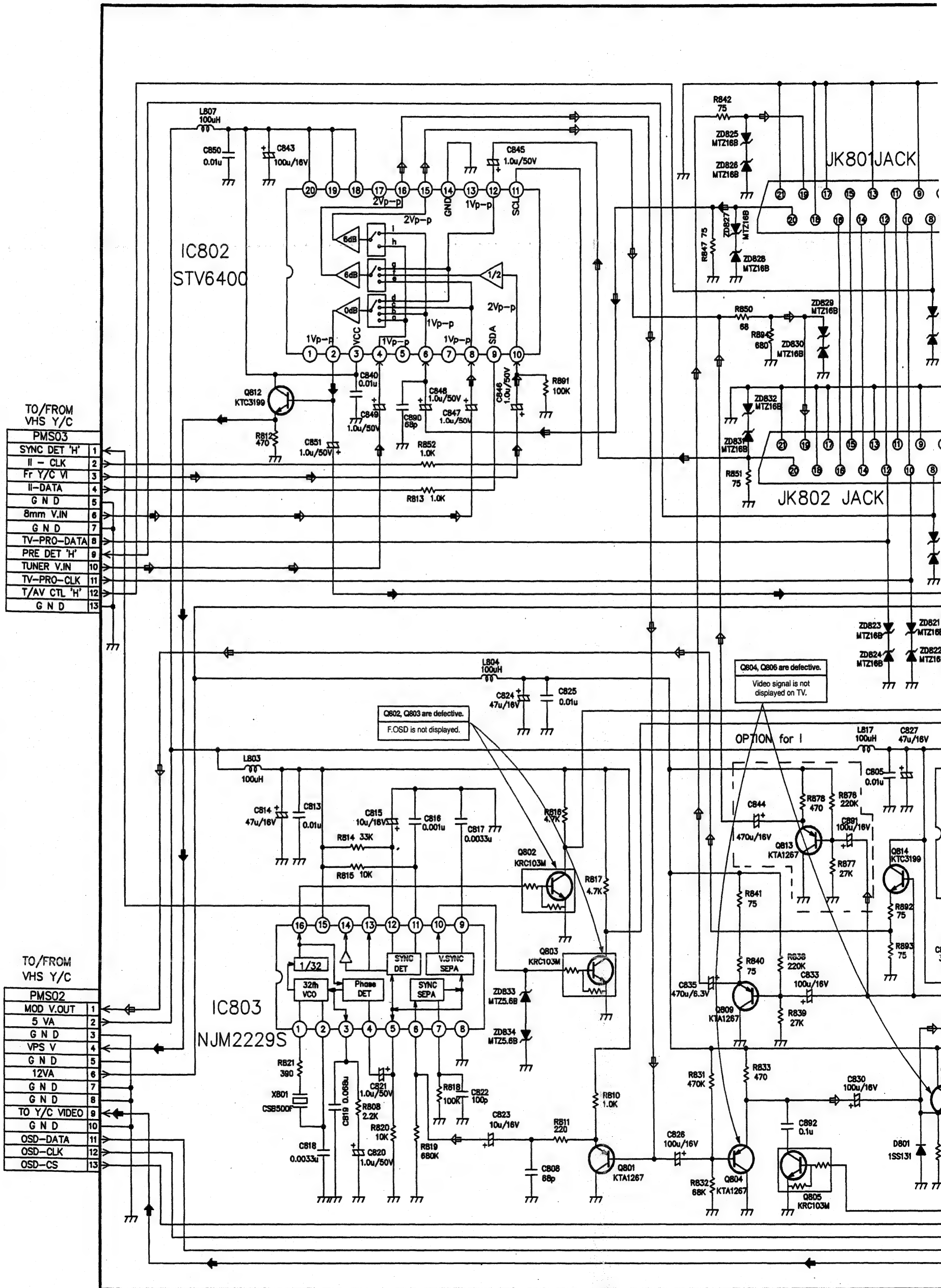
5.1	4.9	4.7	2.3	2.4	0.0	0.0	3.9	0.0	0.0
20				15					
IC801 (M35010)									
1		5					10		
2.4	2.4	4.3	5.3	5.3	5.0	5.1	2.1	3.0	2.0

5.3	5.3	5.3	0.0	2.0	1.7	0.0	0.0	1.4	0.4
20				15					
IC802 (STV6400)									
1	5				10				
0.0	1.3	5.3	1.8	0.0	1.4	0.0	1.8	0.5	2.5

0.3	5.1	0.0	4.4	1.9	0.6	0.0	0.0
15				10			
IC803 (NJM2229S)							
1				5			
2.8	2.2	2.3	0.0	0.0	3.9	3.1	0.0

IC805 (NJM2249L)							
1	5						
5.4	0.0	5.3	0.0	5.8	12.3	4.8	0.0

6.4	6.4	6.4	0.0	6.4	0.0	6.4	6.4
15			10				
IC806 (GL324)							
1	5						
6.5	6.5	6.5	13.0	6.5	6.5	6.5	6.4



TO/FROM VHS Y/C

PMS03	
SYNC DET 'H'	1
II - CLK	2
Fr Y/C VI	3
II-DATA	4
GND	5
8mm V.IN	6
GND	7
TV-PRO-DATA	8
PRE DET 'H'	9
TUNER V.IN	10
TV-PRO-CLK	11
T/AV CTL 'H'	12
GND	13

TO/FROM VHS Y/C

PMS02	
MOD V.OUT	1
5 VA	2
GND	3
VPS V	4
GND	5
12VA	6
GND	7
GND	8
TO Y/C VIDEO	9
GND	10
OSD-DATA	11
OSD-CLK	12
OSD-CS	13

ON VIDEO

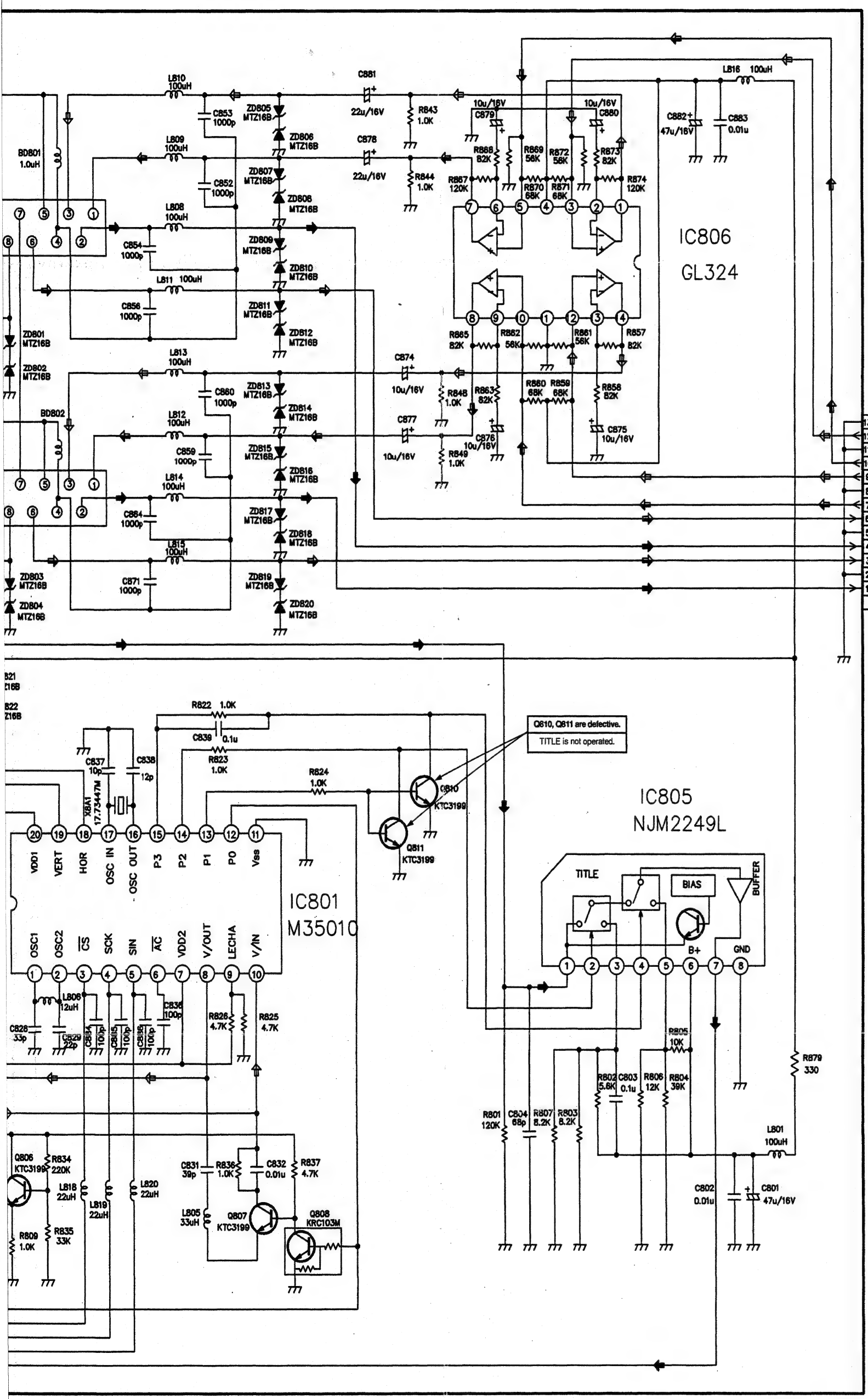
- OUT (MOD,EURO1)
- FR 8MM
- FR Y/C
- FR TUNER
- TO Y/C,VPS
- FR EURO1,EURO2

ON AUDIO

- OUT L(1,2)
- OUT R(1,2)
- IN L(1,2)
- IN R(1,2)

LOCATION GUIDE

BD801	I10	Q813	G4
BD802	I8	Q814	H4
C801	O2	R801	M3
C802	N2	R802	N3
C803	N3	R803	M3
C804	M3	R804	N3
C805	H5	R805	N3
C808	E2	R806	N3
C813	C4	R807	M3
C814	C4	R808	D2
C815	D4	R809	I2
C816	D4	R810	F2
C817	E4	R811	F2
C818	C2	R812	C7
C819	D2	R813	D7
C820	D2	R814	D4
C821	D2	R815	D4
C822	E2	R816	E4
C823	E2	R817	F4
C824	E5	R818	E2
C825	F5	R819	D2
C826	F2	R820	D2
C827	I5	R821	C2
C828	I3	R822	J6
C829	I3	R823	J5
C830	H2	R824	K5
C831	J2	R825	K3
C832	K2	R826	J3
C833	H3	R831	G2
C835	G3	R832	G2
C836	J3	R833	G2
C837	I5	R834	I2
C838	J5	R835	I2
C839	J5	R836	J2
C840	D8	R837	K2
C843	C10	R838	H3
C844	G4	R839	H3
C845	E10	R840	G3
C846	E8	R841	G4
C847	E7	R842	G10
C848	D8	R843	L10
C849	D7	R844	L9
C850	B10	R847	G9
C851	C7	R848	L8
C852	J9	R849	L7
C853	J10	R850	G8
C854	J9	R851	G7
C856	J9	R852	D7
C859	J7	R857	N8
C860	J8	R858	N8
C864	J7	R859	M8
C871	J7	R860	M8
C874	L8	R861	M8
C875	N8	R862	M8
C876	M8	R863	M8
C877	L8	R865	L8
C878	L10	R867	L9
C879	M10	R868	M10
C880	N10	R869	M10
C881	L10	R870	M9
C882	N10	R871	M9
C883	O10	R872	M10
C884	I3	R873	N10
C885	J3	R874	N9
C886	J3	R876	H5
C890	D7	R877	H4
C891	H4	R878	H4
C892	H2	R879	O3
D801	H2	R891	F8
IC801	K4	R892	H4
IC803	C3	R893	H3
IC805	N5	R894	G8
IC806	N9	X801	C2
JK801	H9	X8A1	I5
JK802	G7	ZD801	I8
L801	O3	ZD802	I8
L803	C5	ZD803	I7
L804	E6	ZD804	I6
L805	J2	ZD805	K10
L806	I4	ZD806	K10
L807	B10	ZD807	K9
L808	J9	ZD808	K9
L809	J10	ZD809	K9
L810	J10	ZD810	K9
L811	J9	ZD811	K9
L812	J8	ZD812	K8
L813	J8	ZD813	K8
L814	J7	ZD814	K8
L815	J7	ZD815	K7
L816	O10	ZD816	K7
L817	H5	ZD817	K7
L818	I2	ZD818	K7
L819	I2	ZD819	K7
L820	J2	ZD820	K6
PMS01	P6	ZD821	I6
PMS02	A3	ZD822	I6
PMS03	A7	ZD823	H6
Q801	F2	ZD824	H6
Q802	E4	ZD825	G10
Q803	E3	ZD826	G9
Q804	G2	ZD827	G9
Q805	H1	ZD828	G9
Q806	I2	ZD829	H8
Q807	K2	ZD830	G8
Q808	K2	ZD831	G7
Q809	G3	ZD832	G8
Q810	L5	ZD833	E3
Q811	L5	ZD834	E3
Q812	C8		



95.08.11 7-868A

# 1-8. Pre-Amp Circuit Diagram

8

7

6

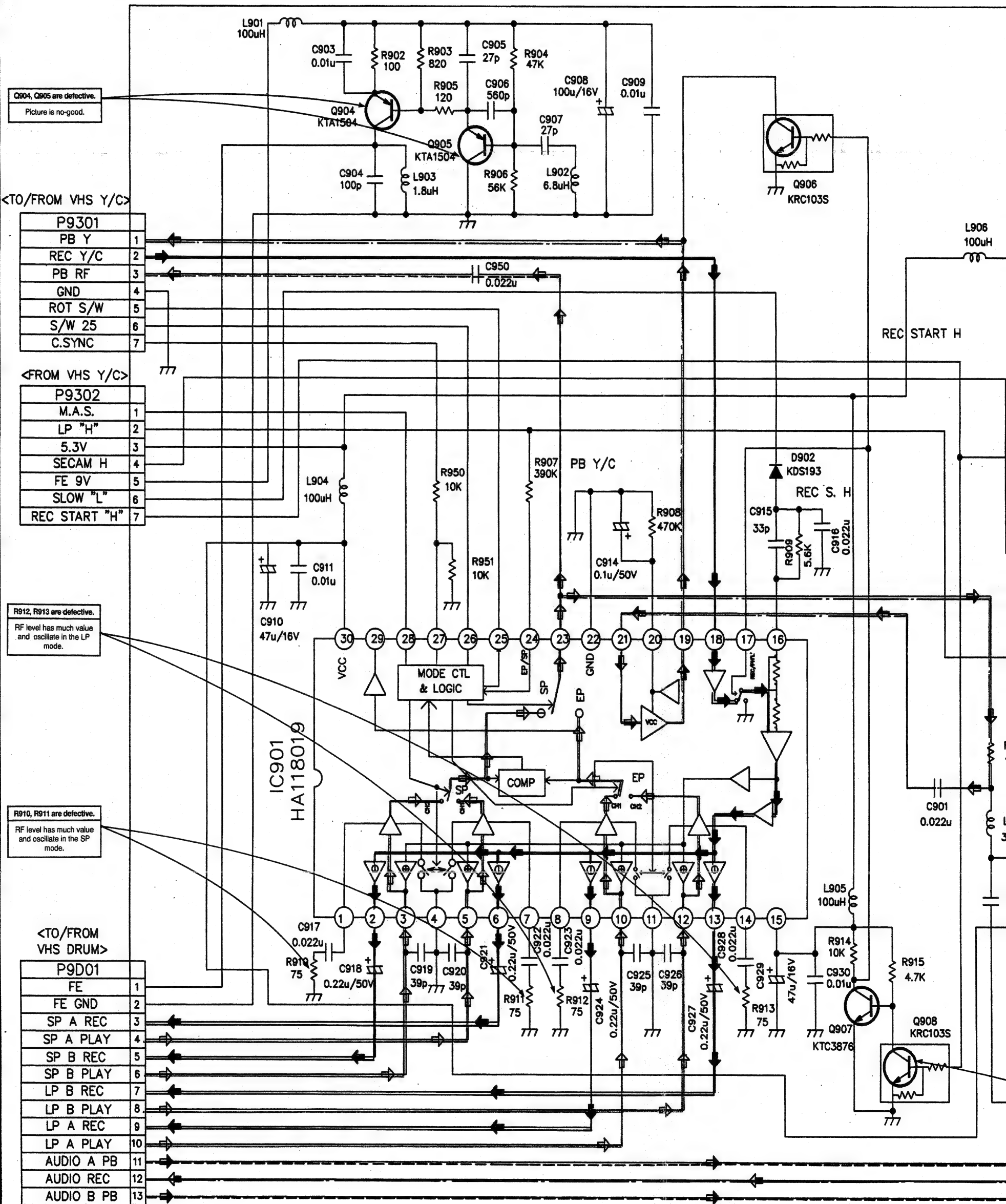
5

4

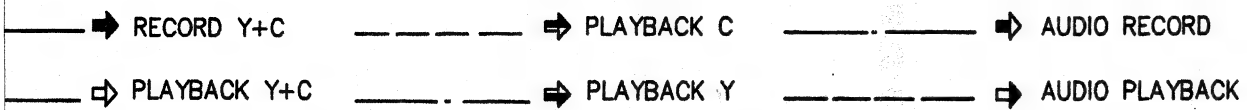
3

2

1

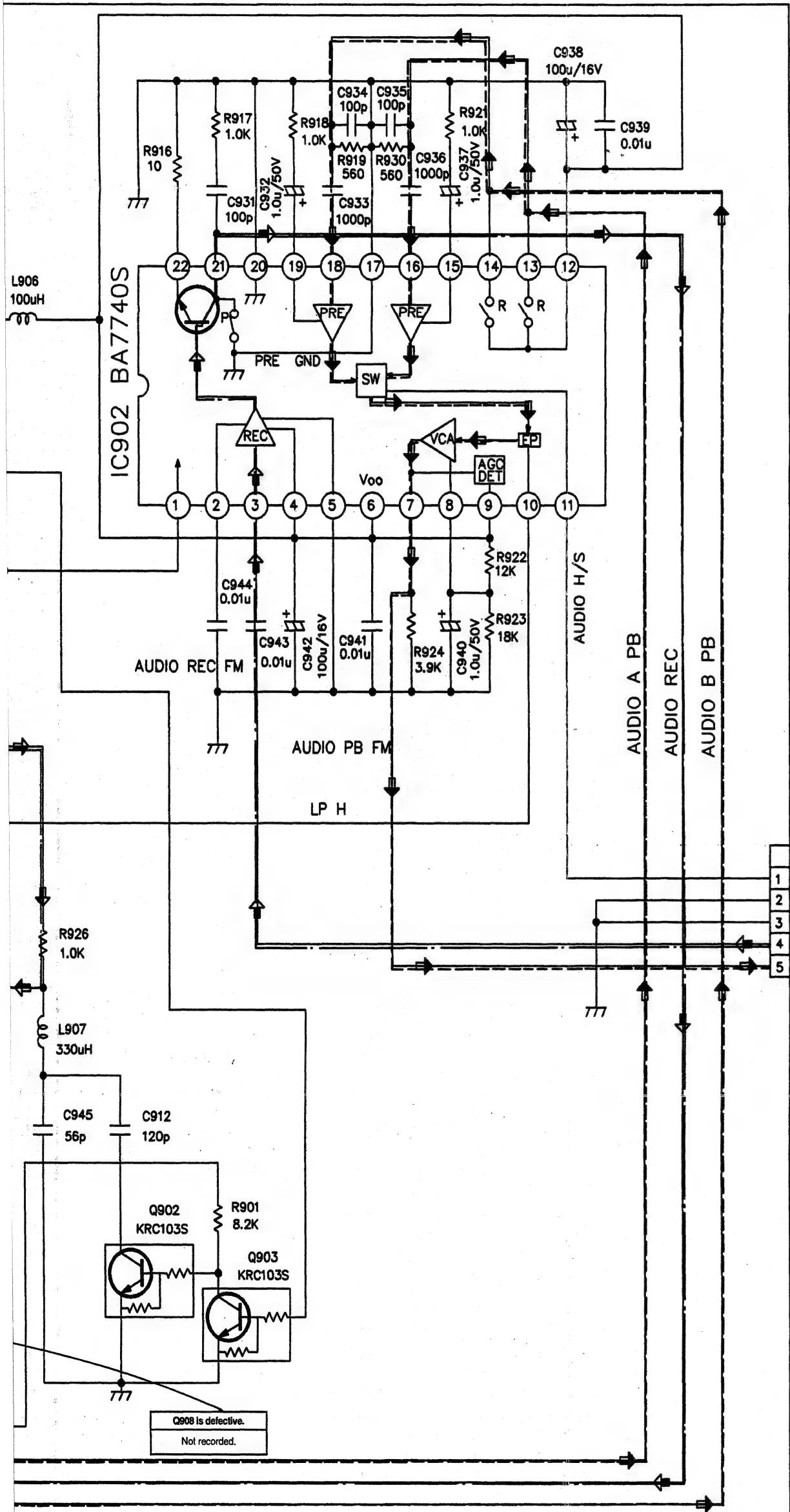






LOCATION GUIDE

C901	G3
C903	C7
C904	C7
C905	D7
C906	D7
C907	D7
C908	D7
C909	E7
C910	B4
C911	C4
C912	G2
C914	D4
C915	E5
C916	F4
C917	B2
C918	C2
C919	C2
C920	C2
C921	D2
C922	D2
C923	D2
C924	D2
C925	E2
C926	E2
C927	E2
C928	E2
C929	F2
C930	F2
C931	H7
C932	H7
C933	H7
C934	H7
C935	I7
C936	I7
C937	I7
C938	J7
C939	J7
C940	I5
C941	H5
C942	H5
C943	H5
C944	H5
C945	G3
C950	D6
D902	F5
IC901	B3
IC902	G5
L901	B7
L902	D7
L903	C7
L904	B5
L905	F3
L906	G6
L907	G3
P9D01	A2
P9301	A6
P9302	A5
P9404	K4
Q902	G2
Q903	H2
Q904	C7
Q905	C7
Q906	F7
Q907	F2
Q908	F2
R901	H2
R902	C7
R903	C7
R904	D7
R905	C7
R906	D7
R907	D5
R908	E5



<TO AUDIO>

P9404	
1	AUDIO H-SW
2	GND
3	GND
4	A-REC FM
5	A-PB FM

R909	F4
R910	B2
R911	D2
R912	D2
R913	E2
R914	F2
R915	F2
R916	G7
R917	H7
R918	H7
R919	H7
R921	I7
R922	I5
R923	I5
R924	I5
R926	G3
R930	I7
R950	C5
R951	C4

95.08.10 7-869A



**\* VHS Pre-Amp IC Voltage Sheet**

SP mode														PB (REC)	
5.0 (5.0)	2.0 (3.8)	4.7 (4.8)	0.3 (0.3)	1.3 (1.3)	2.2 (2.2)	0.1 (0.1)	0 (4.4)	0 (0)	2.8 (3.1)	2.3 (0.1)	2.5 (0)	4.1 (4.1)	0 (2.2)	2.7 (2.7)	
30		25				20									
IC901 (HA118019)															
1		5				10				15					
2.3 (4.3)	0 (2.2)	0.7 (2.2)	0 (0)	0.7 (2.2)	0 (2.2)	2.3 (4.3)	4.2 (4.3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4.2 (4.2)	5.0 (4.8)	

LP mode														PB (REC)	
5.0 (5.0)	2.0 (3.8)	4.7 (4.8)	0.3 (0.3)	1.3 (1.3)	2.2 (2.2)	4.9 (4.9)	3.1 (4.4)	0 (0)	2.8 (3.1)	2.2 (0.1)	2.5 (0)	4.1 (4.0)	0 (2.2)	2.7 (2.7)	
30		25				20									
IC901 (HA118019)															
1		5				10				15					
4.2 (4.2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4.2 (4.2)	2.3 (4.2)	0 (2.1)	0.7 (2.1)	0 (2.1)	0.7 (2.1)	0 (2.1)	2.3 (4.2)	5 (4.8)	

SP mode										PB (REC)	
0 (0)	0 (0)	0 (0)	0.74 (0)	0.65 (0)	0 (0)	0.65 (0)	0.74 (0)	0 (4.27)	0 (4.27)	5.05 (4.98)	
20					15						
IC902 (BA7790S)											
1		5					10				
0.33 (6.0)	0.49 (1.37)	5.05 (2.77)	5.05 (4.98)	0.02 (0)	5.06 (4.98)	2.39 (3.60)	3.02 (2.97)	5.06 (4.98)	0 (0.02)	2.53 (0.01)	

LP mode										REC (PB)	
0 (0)	0 (0)	0 (0)	0.74 (0)	0.65 (0)	0 (0)	0.65 (0)	0.74 (0)	0 (4.27)	4.67 (4.27)	5.05 (4.98)	
20					15						
IC902 (BA7790S)											
1		5				10					
0.33 (6.0)	0.50 (1.37)	2.82 (2.77)	5.05 (4.98)	0 (0)	5.05 (4.98)	2.70 (3.6)	5.05 (2.97)	5.05 (4.98)	5.11 (0.02)	2.53 (0.01)	

\* 8mm System IC Voltage Sheet

IC501 (CXP80724'S)

PB mode

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Voltage	2.5	0.0	0.0	0.0	0.0	0.0	1.8	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	0.0	5.3	5.3	5.2	0.0	5.2	0.0
Pin No.	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Voltage	0.0	4.6	5.2	0.0	5.2	0.0	0.0	0.0	0.0	1.2	0.0	5.0	0.0	0.0	5.3	0.0	2.6	2.3	0.0	5.2	0.0	5.1	0.0	5.2	5.2
Pin No.	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Voltage	0.0	0.0	5.2	5.1	0.0	1.4	0.0	0.0	4.8	4.7	2.4	2.7	0.0	0.0	0.0	0.0	0.0	0.0	6.6	2.5	0.0	5.1	1.0	0.0	1.0
Pin No.	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Voltage	1.0	2.6	5.2	5.2	4.9	5.2	5.3	0.0	0.0	5.7	0.0	5.2	0.0	5.3	5.3	5.3	0.0	5.3	0.0	0.0	5.2	0.0	5.2	2.3	2.6

IC502 (PST523D)		
1		
5.3	0.0	5.3

0.0	0.0	0.0	4.6	0.0	0.0	0.0
10						
IC503 (LB1836M)						
1			5			
4.7	0.0	0.0	4.8	0.0	0.0	0.0

0.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.9	0.0	0.0	1.3	0.0	0.0
30				25					20					
IC504 (CXA1127M)														
1			5					10					15	
0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.7	0.0	6.0	6.0	1.5	0.0	0.0	0.0

6.0	0.8	0.8	0.8	0.8	0.8	1.6	0.9	1.0	1.0	1.0	1.8	0.0	0.0	0.0	0.0
30						25					20				
IC505 (GL7416)															
1			5					10					15		
0.0	0.0	0.0	0.0	0.0	1.0	3.5	5.8	5.8	0.0	0.0	6.0	0.0	1.8	0.0	0.0

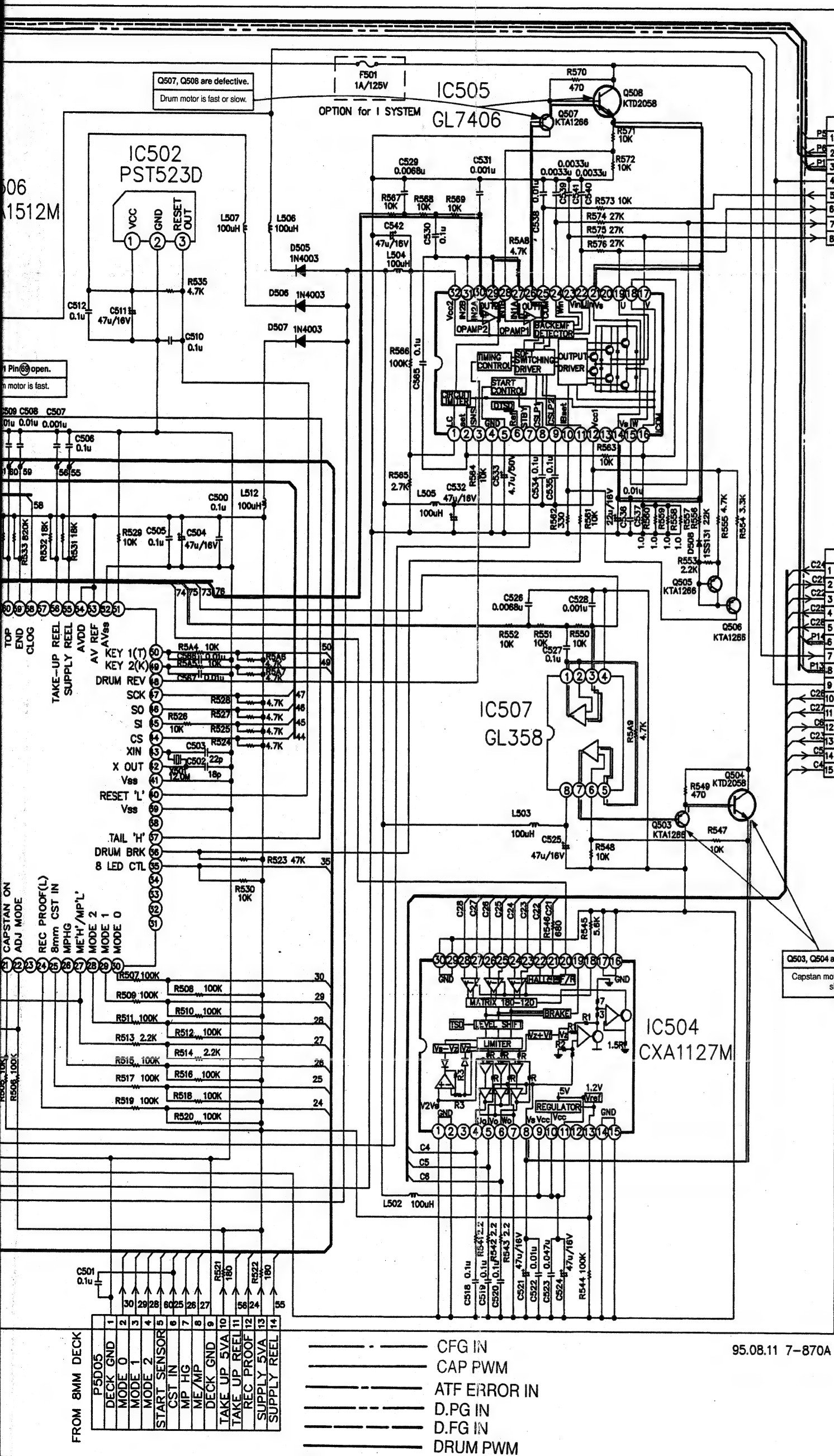
2.6	2.6	2.5	5.3	2.5	0.0	1.9
10						
IC506 (CXA1512M)						
1			5			
0.0	2.0	1.3	1.9	1.9	1.9	0.0

IC508 (XR10823)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	0.0	2.5	5.2	0.0	2.6	0.0	1.5	2.2	2.5	0.0	0.0	0.0	0.0	0.0	2.6	2.6
Pin No.	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Voltage	3.4	0.8	2.0	0.0	0.0	0.6	0.9	2.6	0.0	2.6	2.6	2.6	2.6	0.0	2.5	2.5

### 2-1. Main System (Servo, Syscon) Circuit Diagram





LOCATION GUIDE

C500	K7	Q502	C4
C501	J2	Q503	N5
C502	K5	Q504	O5
C503	K5	Q505	N7
C504	K7	Q506	O6
C505	J7	Q507	M10
C506	J8	Q508	N10
C507	I8	Q509	B8
C508	I8	Q510	B7
C509	I8	R501	G4
C510	K8	R502	I3
C511	J9	R503	I3
C512	J9	R504	I3
C513	I8	R505	I3
C514	H8	R506	I3
C515	H10	R507	J4
C516	H10	R508	J4
C517	H10	R509	J4
C518	M2	R510	J4
C519	M2	R511	J4
C520	M2	R512	J3
C521	M2	R513	J3
C522	M2	R514	J3
C523	M2	R515	J3
C524	N2	R516	J3
C525	M5	R517	J3
C526	M7	R518	J3
C527	M6	R519	J3
C528	N7	R520	J3
C529	L10	R521	K2
C530	L9	R522	K2
C531	M10	R523	K5
C532	M7	R524	K6
C533	M7	R525	K6
C534	M7	R526	J6
C535	M7	R527	K6
C536	N7	R528	K6
C537	N7	R529	J7
C538	M9	R530	K4
C539	N9	R531	J7
C540	N9	R532	I7
C541	N9	R533	I7
C542	L9	R534	I7
C544	B4	R535	K9
C545	E3	R536	G7
C546	D4	R537	H8
C547	B8	R538	H8
C548	B8	R539	B4
C549	C8	R541	M2
C550	C8	R542	M2
C551	B9	R543	M2
C552	C9	R544	N2
C553	B7	R545	N4
C554	B7	R546	M4
C555	C8	R547	O5
C556	C6	R548	N5
C557	C6	R549	O5
C558	F6	R550	N6
C559	F6	R551	M6
C560	F7	R552	M6
C561	F7	R553	N7
C562	F8	R554	O7
C563	D9	R555	O7
C564	D10	R556	O7
C565	L8	R557	O7
C566	J6	R558	N7
C567	J6	R559	N7
C568	I8	R560	N7
C569	C8	R561	N7
D501	F2	R562	M7
D502	C4	R563	N8
D503	C4	R564	M7
D504	C4	R565	L7
D505	K9	R566	L8
D506	K9	R567	L9
D507	K8	R568	L9
D508	O7	R569	M9
F501	L10	R570	N10
IC501	H5	R571	N10
IC502	J10	R572	N10
IC503	D3	R573	N9
IC504	N3	R574	N9
IC505	M10	R575	N9
IC506	I9	R576	N9
IC507	M6	R577	B8
IC508	C9	R578	B8
L501	C4	R579	B8
L502	L2	R580	B8
L503	M5	R581	B8
L504	L9	R582	C7
L505	L7	R583	D6
L506	K9	R584	D6
L507	K9	R585	D6
L508	B9	R586	D6
L509	B8	R587	E6
L510	B8	R588	E6
L511	C6	R589	E6
L512	K7	R590	F7
P5201	A5	R591	F8
P5D02	D1	R592	F8
P5D05	J1	R593	F8
P5D06	P7	R594	G8
P5D07	P10	R595	E9
P5T03	H1	R596	E10

TO/FROM 8MM DECK

P5D07	1	COM PG.FG
P5D07	2	PG +
P5D07	3	FG +
P5D07	4	GND
P5D07	5	COM UVW
P5D07	6	DRUM U
P5D07	7	DRUM W
P5D07	8	DRUM V

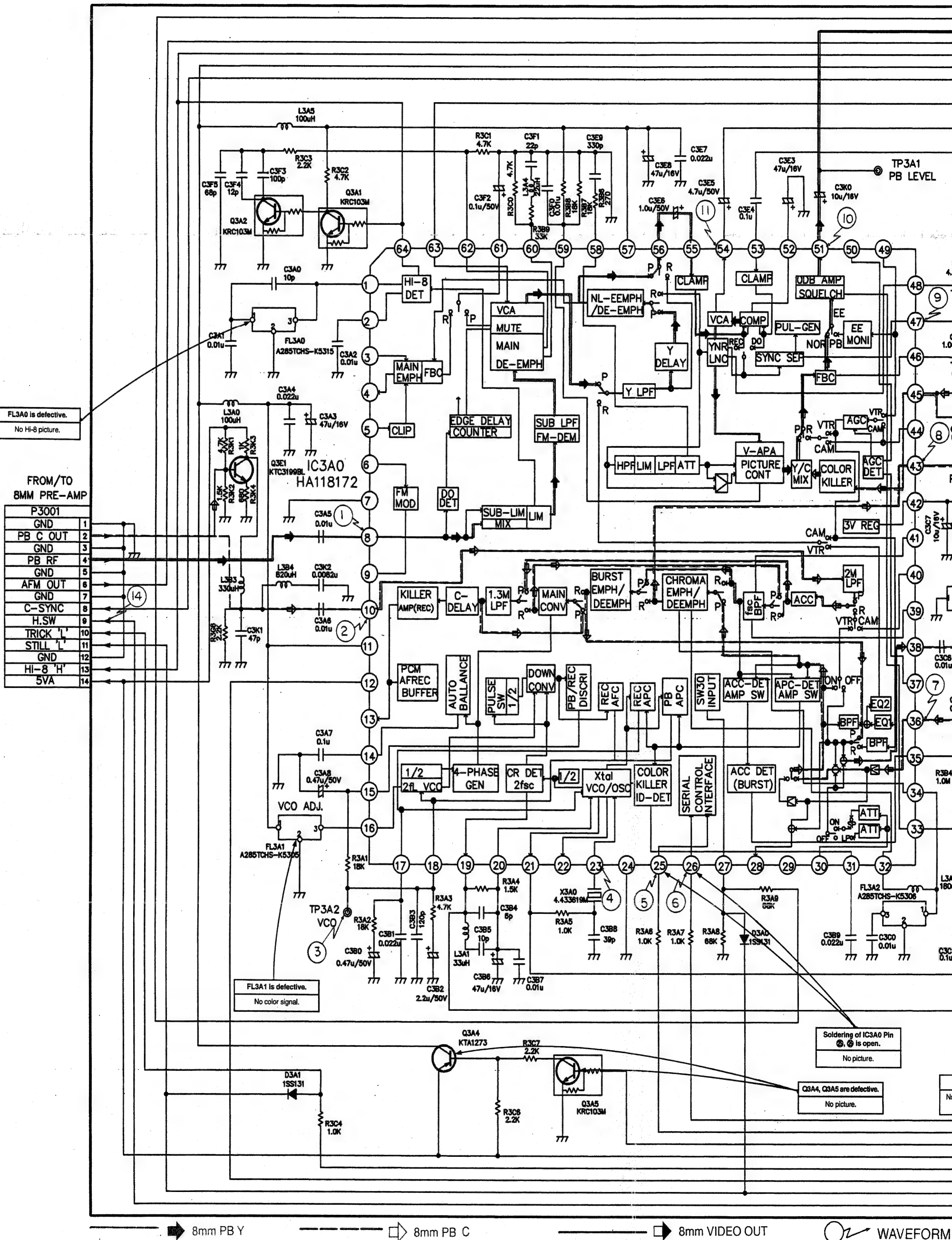
TO/FROM 8MM DECK

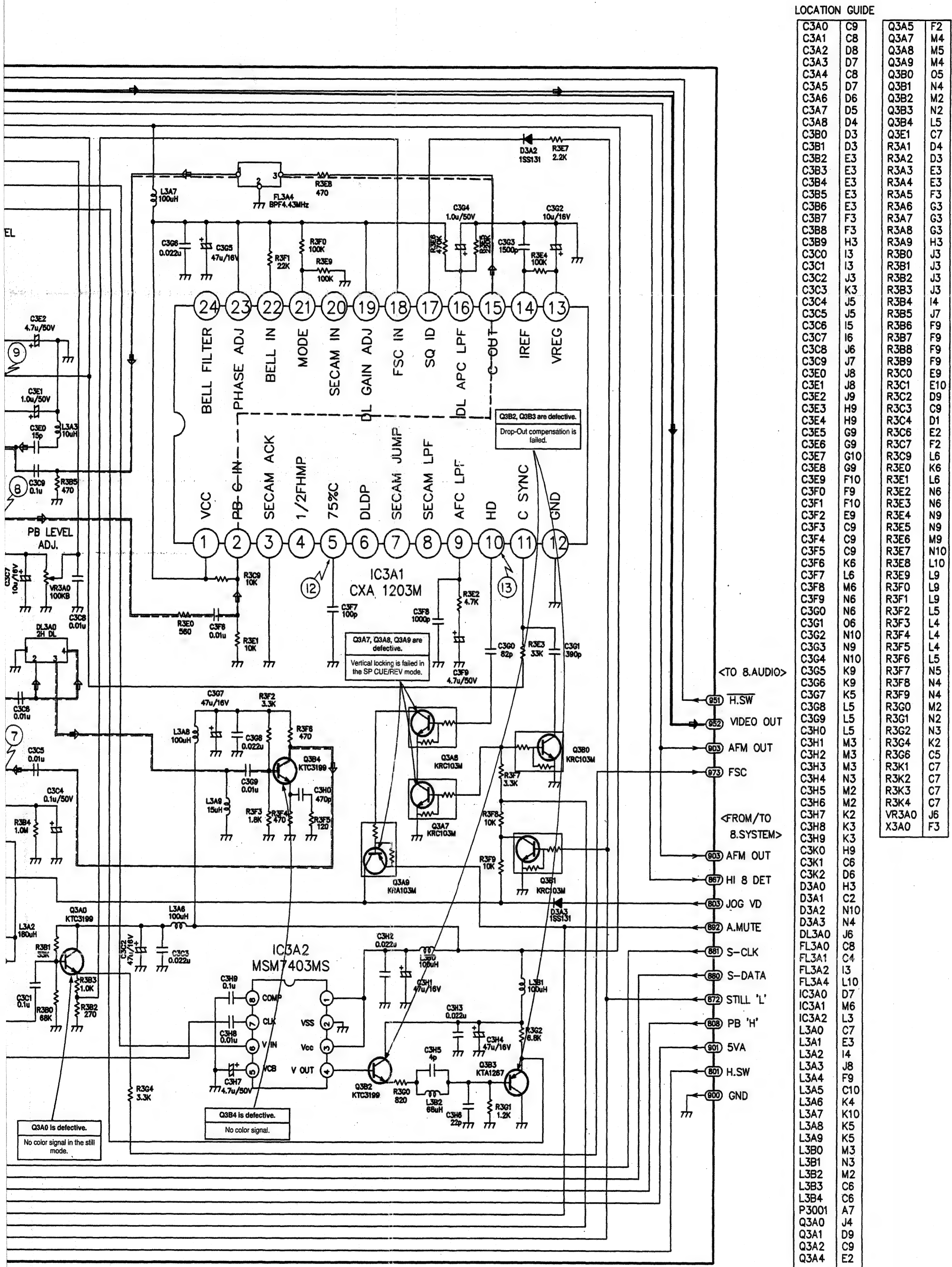
P5D06	1	HU -
P5D06	2	HE VH +
P5D06	3	HE VH -
P5D06	4	HV +
P5D06	5	HW -
P5D06	6	FG +
P5D06	7	MR Vcc(6VA)
P5D06	8	FG -
P5D06	9	MR GND
P5D06	10	HV -
P5D06	11	HW +
P5D06	12	CAP W
P5D06	13	HU +
P5D06	14	CAP V
P5D06	15	CAP U

R597	E10
R598	E9
R599	D9
R5A1	D10
R5A2	D10
R5A3	D3
R5A4	J6
R5A5	J6
R5A6	K6
R5A7	K6
R5A8	M9
R5A9	N6
X501	J5
X502	C7
ZD501	C4



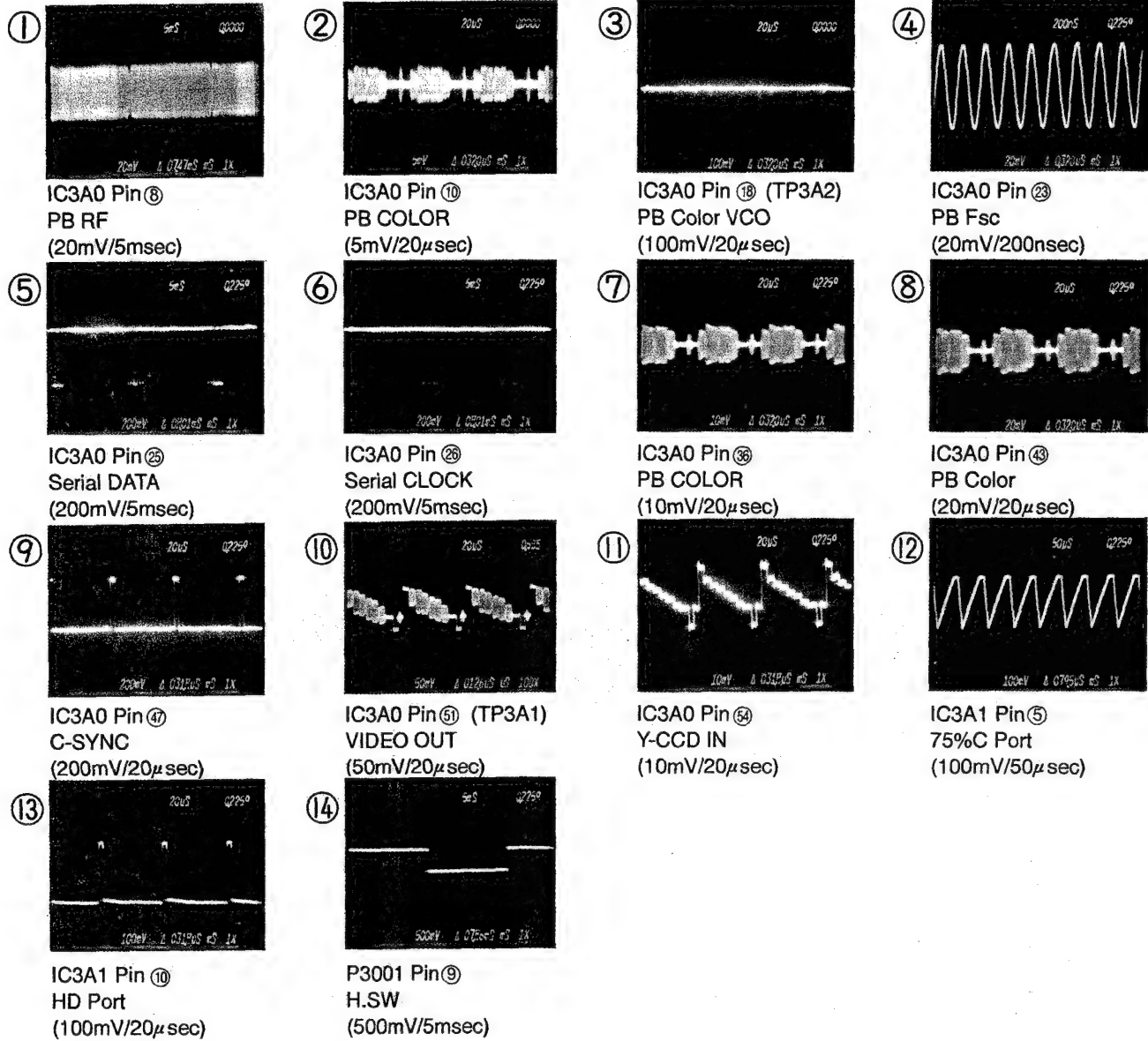
# 2-2. Y/C Circuit Diagram







• 8mm Y/C Waveform (When taking a photograph of waveform, set probe of oscilloscope to 10:1)



• 8mm Y/C TR Voltage Sheet

Port TR No.	Emitter	Collector	Base	Mode
Q3A0	2.9	5.3	3.5	
Q3A1	0.0	0.0	4.3	Hi-8 PB
	0.0	4.4	0.0	Normal PB
Q3A2	0.0	0.0	0.0	Hi-8 PB
	0.0	0.0	4.4	Normal PB
Q3A4	5.3	5.2	4.6	PB
Q3A5	0.0	0.0	5.3	PB
Q3A7	0.0	0.0	0.0	PB
	0.0	2.9	0.4	Still
	0.0	2.4	0.9	Cue/Rev
Q3A8	0.0	0.4	0.0	PB
	2.9	4.3	0.1	Still
	2.4	5.2	0.3	Cue/Rev
Q3A9	0.0	0.9	0.4	PB
	4.3	0.9	4.3	Still
	5.3	1.0	5.2	Cue/Rev
Q3B0	0.0	0.2	0.0	PB
	0.0	0.2	0.4	Still
	0.0	0.2	0.9	Cue/Rev
Q3B1	0.0	0.0	5.3	PB
	0.0	0.7	0.2	Still
	0.0	0.0	5.3	Cue/Rev
Q3B2	3.0	5.2	3.6	PB
Q3B3	2.4	0.0	1.8	PB
Q3B4	1.2	4.0	1.8	PB

PB mode											
1.5	5.2	4.7	2.7	0.1	5.2	0.7	4.8	1.9	2.2	2.2	4.3
24				20				15			
IC3A1 (CXA1203M)											
1			5			10					
5.2	2.5	0.1	0.0	2.7	0.0	2.1	2.6	2.1	1.0	0.6	0.0

• 8mm Y/C IC Voltage Sheet

PB mode																
0.0	2.0	1.2	3.3	1.2	2.6	2.1	5.1	2.1	3.1	2.4	3.2	1.5	2.2	1.3	3.1	
2.5	1			60				55				50				1.4
5.0	2 PIN HI-8 : 0.0 64 PIN HI-8 : 4.3															0.4
0.5																2.9
0.7																45 2.2
2.0	5															2.9
0.6																2.2
0.0																3.0
3.0																2.1
4.2																40 2.3
2.3	10															2.2
5.1																1.8
0.0																1.9
0.0																3.0
2.3																35 2.9
2.2	15															2.1
5.1				20				25				30				0.8
	2.5	2.5	2.5	2.5	3.0	2.2	2.8	0.0	5.1	5.4	1.3	2.2	0.0	3.0	1.1	2.1

PB mode				
8.6	2.7	2.2	2.2	
8	IC3A2 (M7403)			5
1				
5.3	0.0	5.3	3.7	

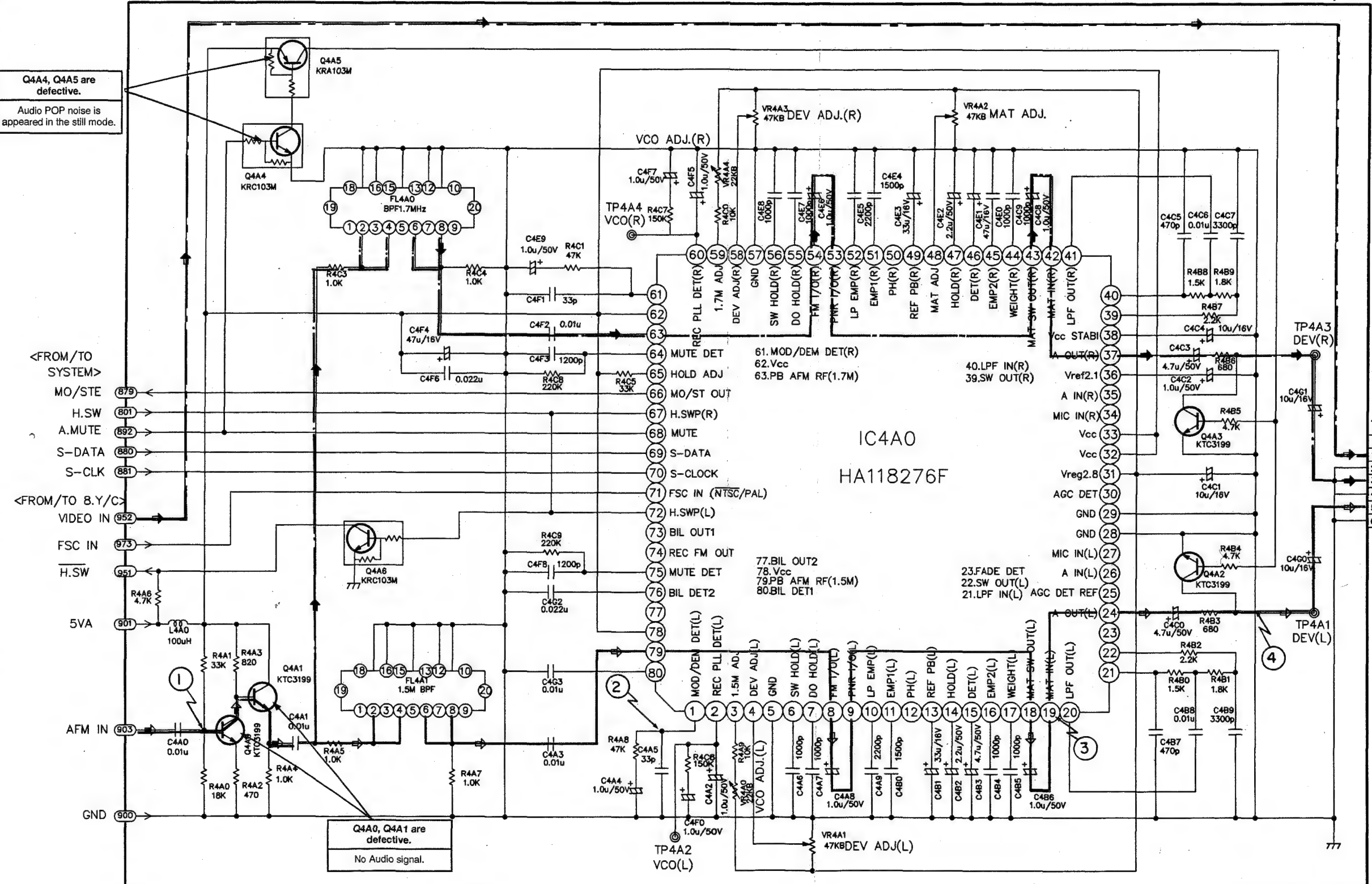
# 2-3. Audio Circuit Diagram

WAVEFORM

AFM  
8mm PB AUDIO (L)  
8mm VIDEO OUT  
8mm PB AUDIO (R)

LOCATION GUIDE

C4A0	B2
C4A1	C2
C4A2	F1
C4A3	E2
C4A4	E2
C4A5	E2
C4A6	G1
C4A7	G1
C4A8	G1
C4A9	G1
C4B0	G1
C4B1	H1
C4B2	H1
C4B3	H1
C4B4	H1
C4B5	H1
C4B6	H1
C4B7	I2
C4B8	J2
C4B9	J2
C4C0	I3
C4C1	J4
C4C2	I5
C4C3	I5
C4C4	J5
C4C5	I6
C4C6	J6
C4C7	J6
C4C8	H6
C4C9	H6
C4E0	H6
C4E1	H6
C4E2	H6
C4E3	G6
C4E4	G6
C4E5	G6
C4E6	G6
C4E7	G6
C4E8	F6
C4E9	E6
C4F0	F1
C4F1	E5
C4F2	E5
C4F3	E5
C4F4	D5
C4F5	F6
C4F6	D5
C4F7	E6
C4F8	E3
C4G0	J3
C4G1	J5
C4G2	E3
C4G3	E2
C4G4	D6
C4G5	D2
C4G6	G4
C4G7	B3
C4G8	K4
C4G9	J5
C4H0	F6
C4H1	E6
C4H2	J3
C4H3	C5
C4H4	D5
C4H5	E5
C4H6	F2
C4H7	F6
C4H8	E5
C4H9	E3
C4I0	F1
C4I1	G1
C4I2	H7
C4I3	F7
C4I4	F6
C4I5	F6
C4I6	F6
C4I7	F6
C4I8	F6
C4I9	F6
C4J0	F6
C4J1	F6
C4J2	F6
C4J3	F6
C4J4	F6
C4J5	F6
C4J6	F6
C4J7	F6
C4J8	F6
C4J9	F6
C4K0	F6
C4K1	F6
C4K2	F6
C4K3	F6
C4K4	F6
C4K5	F6
C4K6	F6
C4K7	F6
C4K8	F6
C4K9	F6
C4L0	F6
C4L1	F6
C4L2	F6
C4L3	F6
C4L4	F6
C4L5	F6
C4L6	F6
C4L7	F6
C4L8	F6
C4L9	F6
C4M0	F6
C4M1	F6
C4M2	F6
C4M3	F6
C4M4	F6
C4M5	F6
C4M6	F6
C4M7	F6
C4M8	F6
C4M9	F6
C4N0	F6
C4N1	F6
C4N2	F6
C4N3	F6
C4N4	F6
C4N5	F6
C4N6	F6
C4N7	F6
C4N8	F6
C4N9	F6
C4O0	F6
C4O1	F6
C4O2	F6
C4O3	F6
C4O4	F6
C4O5	F6
C4O6	F6
C4O7	F6
C4O8	F6
C4O9	F6
C4P0	F6
C4P1	F6
C4P2	F6
C4P3	F6
C4P4	F6
C4P5	F6
C4P6	F6
C4P7	F6
C4P8	F6
C4P9	F6
C4Q0	F6
C4Q1	F6
C4Q2	F6
C4Q3	F6
C4Q4	F6
C4Q5	F6
C4Q6	F6
C4Q7	F6
C4Q8	F6
C4Q9	F6
C4R0	F6
C4R1	F6
C4R2	F6
C4R3	F6
C4R4	F6
C4R5	F6
C4R6	F6
C4R7	F6
C4R8	F6
C4R9	F6
C4S0	F6
C4S1	F6
C4S2	F6
C4S3	F6
C4S4	F6
C4S5	F6
C4S6	F6
C4S7	F6
C4S8	F6
C4S9	F6
C4T0	F6
C4T1	F6
C4T2	F6
C4T3	F6
C4T4	F6
C4T5	F6
C4T6	F6
C4T7	F6
C4T8	F6
C4T9	F6
C4U0	F6
C4U1	F6
C4U2	F6
C4U3	F6
C4U4	F6
C4U5	F6
C4U6	F6
C4U7	F6
C4U8	F6
C4U9	F6
C4V0	F6
C4V1	F6
C4V2	F6
C4V3	F6
C4V4	F6
C4V5	F6
C4V6	F6
C4V7	F6
C4V8	F6
C4V9	F6
C4W0	F6
C4W1	F6
C4W2	F6
C4W3	F6
C4W4	F6
C4W5	F6
C4W6	F6
C4W7	F6
C4W8	F6
C4W9	F6
C4X0	F6
C4X1	F6
C4X2	F6
C4X3	F6
C4X4	F6
C4X5	F6
C4X6	F6
C4X7	F6
C4X8	F6
C4X9	F6
C4Y0	F6
C4Y1	F6
C4Y2	F6
C4Y3	F6
C4Y4	F6
C4Y5	F6
C4Y6	F6
C4Y7	F6
C4Y8	F6
C4Y9	F6
C4Z0	F6
C4Z1	F6
C4Z2	F6
C4Z3	F6
C4Z4	F6
C4Z5	F6
C4Z6	F6
C4Z7	F6
C4Z8	F6
C4Z9	F6

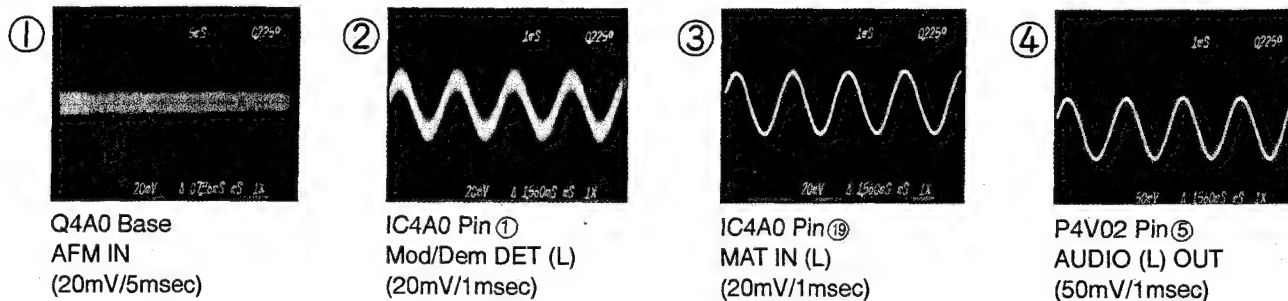


95.04.26 7-872A

3-75

3-76

• **8mm AUDIO Waveform** (When taking a photograph of waveform, set probe of oscilloscope to 10:1)



• **8mm Audio TR Voltage Sheet**

PB mode

Port TR No.	Emitter	Collector	Base
Q4A0	1.2	3.2	1.8
Q4A1	2.6	5.2	3.2
Q4A2	0.0	0.0	0.0
Q4A3	0.0	0.0	0.0
Q4A4	0.0	5.2	0.0
Q4A5	5.3	0.0	5.2
Q4A6	0.0	2.6	2.6

• **8mm Audio IC Voltage Sheet**

PB mode

	1.5	1.9	0.8	0.0	2.3	2.3	2.3	2.3	2.3	2.3	3.1	2.3	2.2	0.0	0.0	2.3	2.3	2.3	2.3	2.3	
2.3	60				55						50					45				40	2.3
5.3																				2.4	
2.1																				5.3	
1.8																				2.8	
4.7	65																			2.3	
0.0	66 PIN MONO : 4.7V																			35	2.3
2.8																				2.3	
0.0																				5.3	
5.2																				5.3	
5.5	70																			2.9	
2.8																				30	0.4
2.8																				0.0	
0.0																				0.0	
3.6																				2.3	
0.8	75																			2.3	
1.7																				25	2.3
0.0																				2.8	
5.3																				0.0	
2.1																				2.3	
3.7	1																			20	2.3
		5									10					15					
	2.3	1.5	1.8	0.7	0.0	2.3	2.3	2.3	2.3	2.3	3.0	2.3	0.2	0.2	2.3	2.3	2.3	2.3	2.3		

• 8mm Pre-Amp TR Voltage Sheet

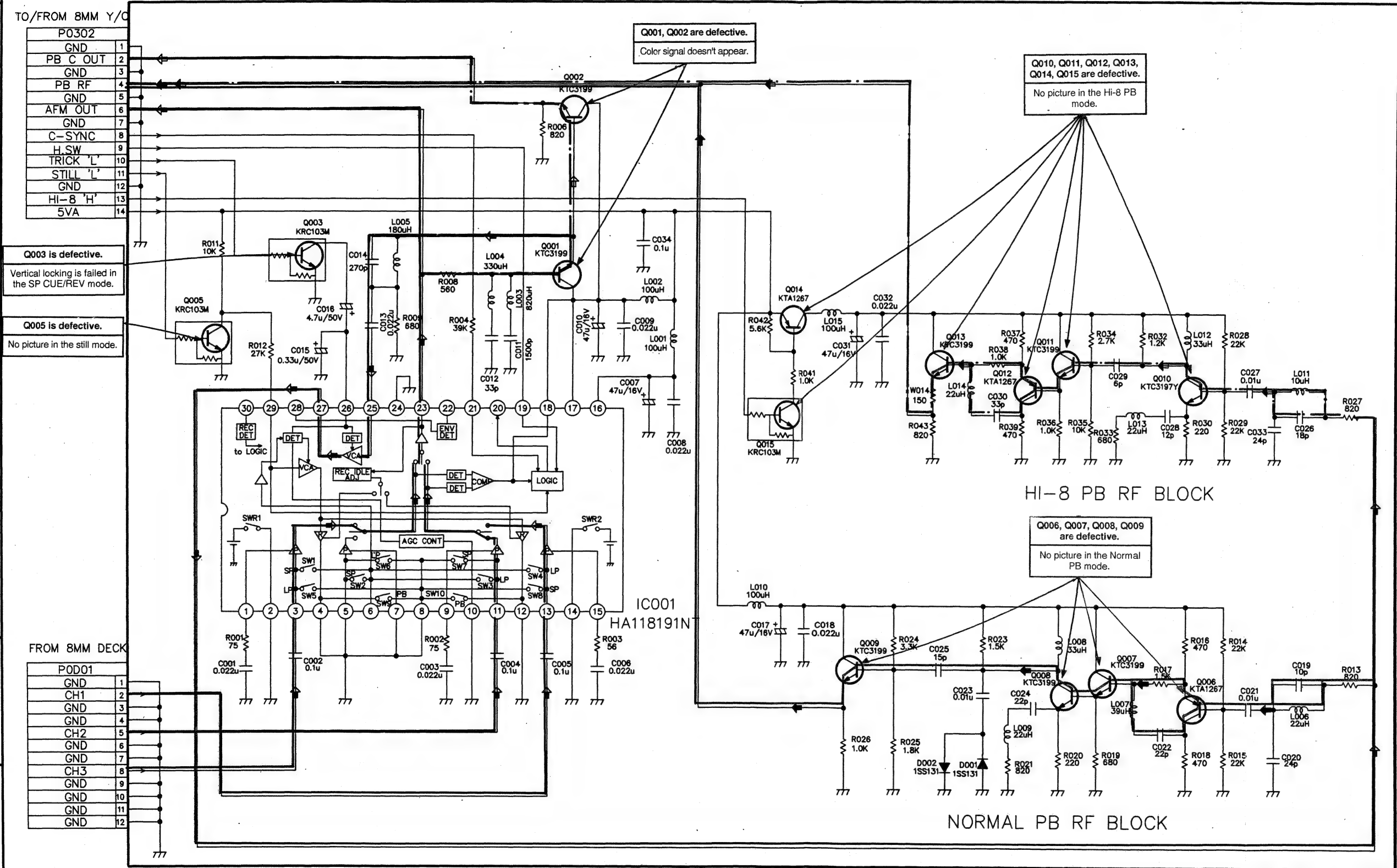
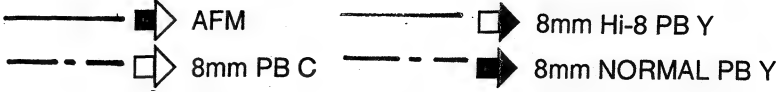
Port TR No.	Emitter	Collector	Base	Mode
Q001	2.4	5.1	3.1	
Q002	1.7	5.1	2.4	
Q003	0.0	0.0	4.9	PB
	0.0	3.6	0.1	Cue/Rev
Q005	0.0	0.0	5.1	PB
	0.0	4.4	0.2	Still
Q006	3.4	1.8	2.7	
Q007	2.7	5.2	3.3	
Q008	2.0	5.1	2.7	
Q009	1.2	5.2	1.8	Normal PB
	3.3	5.1	1.8	Hi-8 PB
Q010	1.1	5.1	1.8	
Q011	3.3	5.1	4.0	
Q012	4.0	1.1	3.3	
Q013	0.0	0.0	1.2	Normal PB
	3.3	5.1	4.0	Hi-8 PB
Q014	5.2	0.0	5.2	Normal PB
	5.2	5.1	4.4	Hi-8 PB
Q015	0.0	5.2	0.0	Normal PB
	0.0	0.1	4.2	Hi-8 PB

• 8mm Pre-Amp IC Voltage Sheet

														PB mode	
0.1	0.1	0.3	1.8	1.5	3.7	0.0	3.1	3.9	0.2	2.3	2.6	5.1	5.1	5.2	
30						25						20			
<div>IC001 (HA118191NT)</div>															
1						5						10		15	
2.2	0.0	0.7	0.0	0.0	3.2	0.0	0.0	2.1	0.0	0.7	0.0	0.7	0.0	2.1	

2-4. Pre-Amp Circuit Diagram

LOCATION GUIDE



C001	B2
C002	C2
C003	D2
C004	D2
C005	E2
C006	E2
C007	E4
C008	F4
C009	F5
C010	E5
C011	E5
C012	D5
C013	D5
C014	C5
C015	C5
C016	C5
C017	F3
C018	G3
C019	K2
C020	K2
C021	J2
C022	J2
C023	H2
C024	I2
C025	H2
C026	K4
C027	J5
C028	J4
C029	I5
C030	H4
C031	G5
C032	G5
C033	J4
C034	F6
D001	H1
D002	H2
IC001	F3
L001	F5
L002	F5
L003	E5
L004	D5
L005	D6
L006	K2
L007	I2
L008	I2
L009	I2
L010	F3
L011	K5
L012	J5
L013	I4
L014	H4
L015	G5
P0302	A7
Q001	E6
Q002	E7
Q003	C8
Q005	B5
Q006	J2
Q007	I2
Q008	I2
Q009	G2
Q010	J5
Q011	I5
Q012	H5
Q013	H5
Q014	G5
Q015	F4
R001	B2
R002	D2
R003	E2
R004	D5
R005	E6
R006	D5
R007	D5
R008	D5
R009	D5
R010	B6
R011	B5
R012	K2
R013	J2
R014	J2
R015	J2
R016	J2
R017	J2
R018	J2
R019	I2
R020	I2
R021	I1
R022	H2
R023	H2
R024	H2
R025	H2
R026	G2
R027	K4
R028	J5
R029	J4
R030	J4
R031	J5
R032	I4
R033	I4
R034	I5
R035	I4
R036	I4
R037	H5
R038	H5
R039	H4
R040	G5
R041	F5
R042	H4
R043	H4
W014	H4

95.08.11 7-873A



5



3

2

1

A

B

C

D

E

F

○

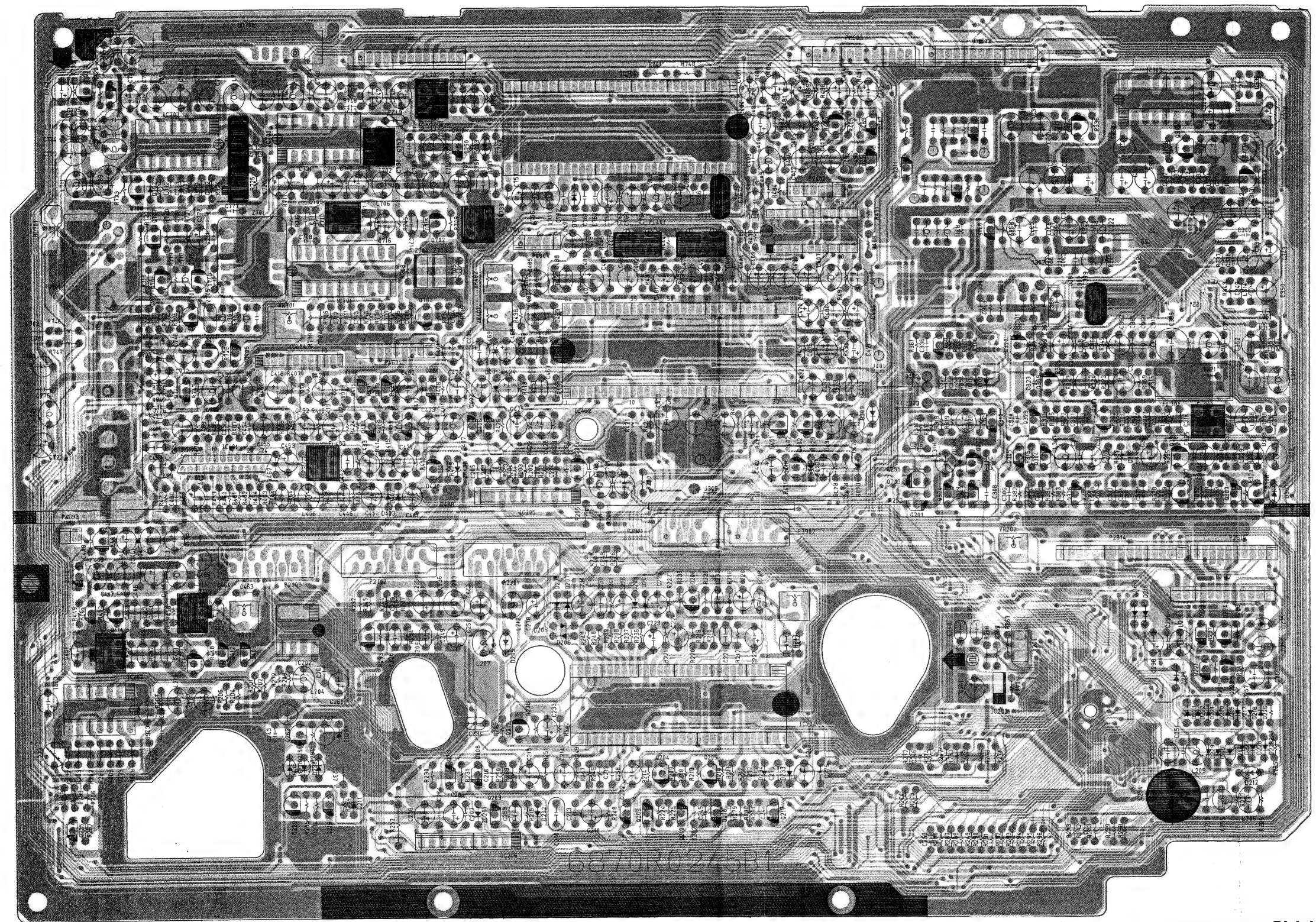
H



# PRINTED CIRCUIT BOARD DIAGRAMS

## 1. VHS Printed Circuit Board

### 1-1. Main P.C.Board



(Component Side)

A

B

C

3-83

D

3-84

E

F

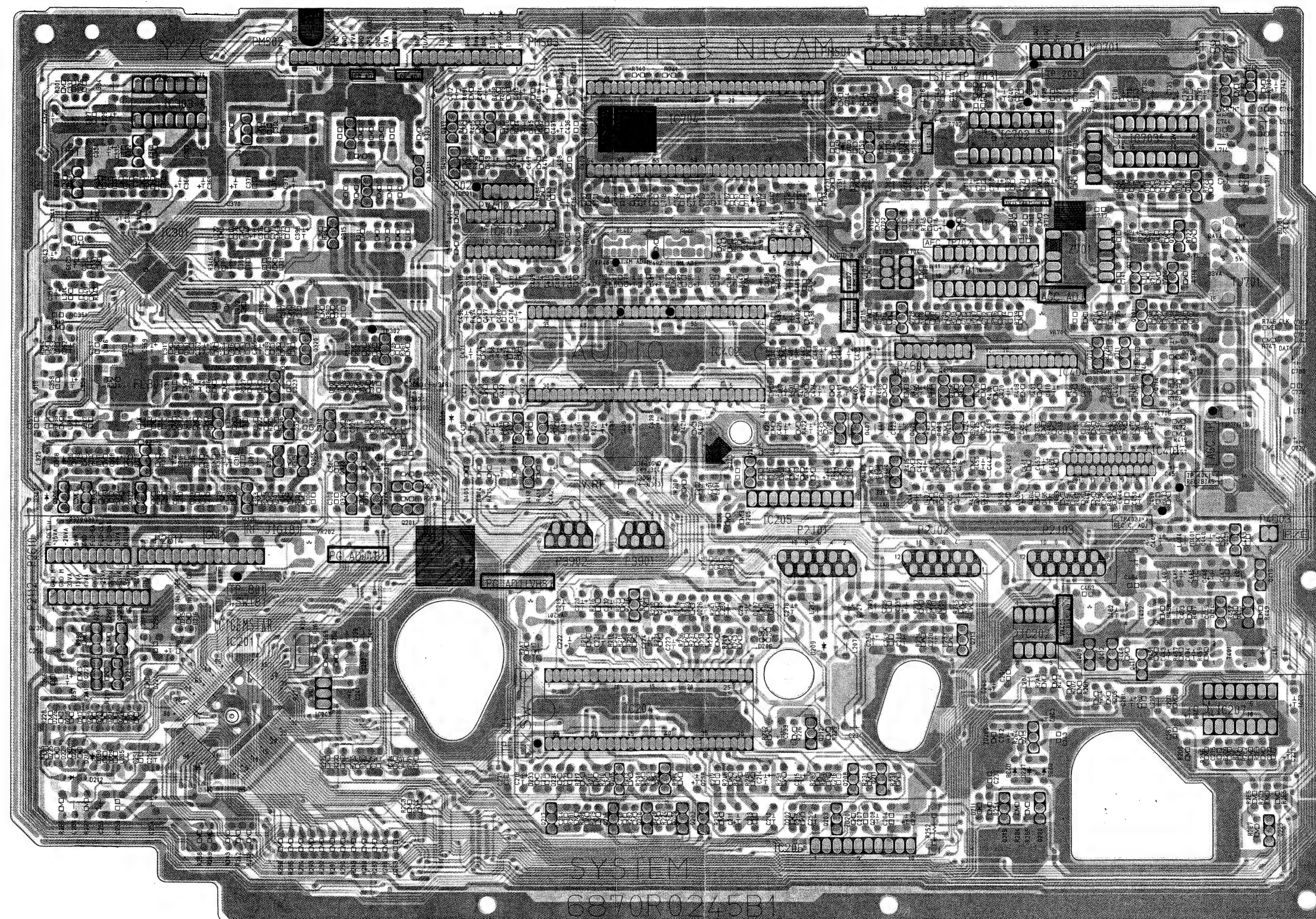
G

H



# Main P.C.Board

NOTE) ● : MEASUREMENT POINT  
□ : ADJUSTMENT POINT  
○ : Emitter : TRANSISTOR  
○ : Collector  
○ : Base



(Solder Side)

A

B

C

D

E

F

G

H

3-85

3-86



## 5



3

## 2



A

B

C

**3-87**

D

**3-88**

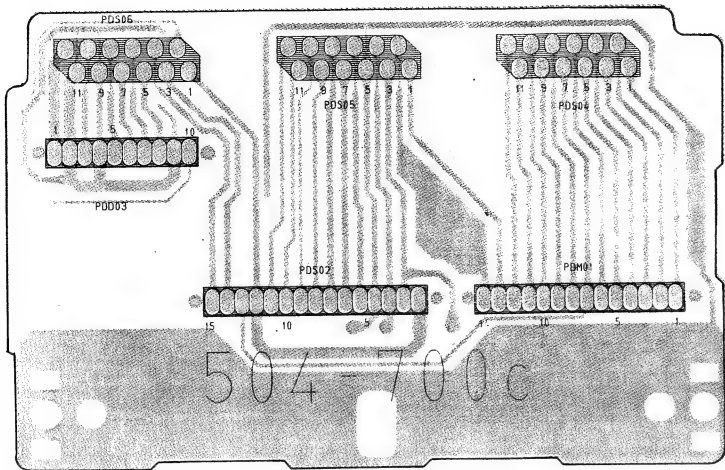
E

F

G

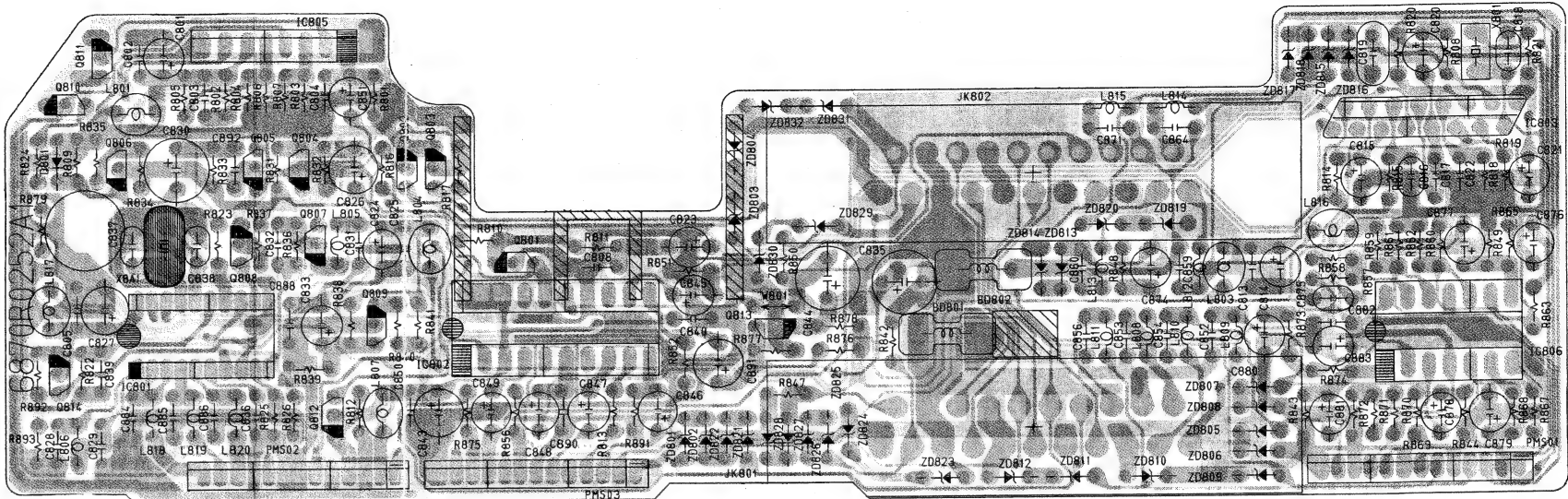
H

1-5. Deck Junction P.C.Board

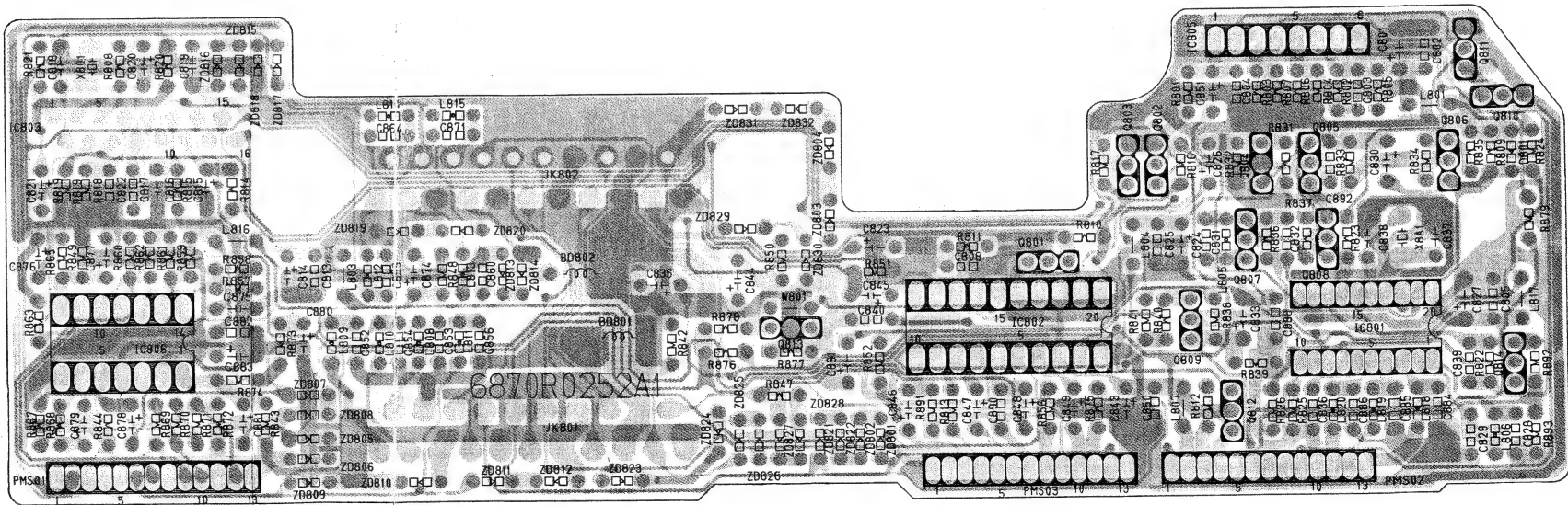


(Solder Side)

1-6. Scart In/Out P.C.Board



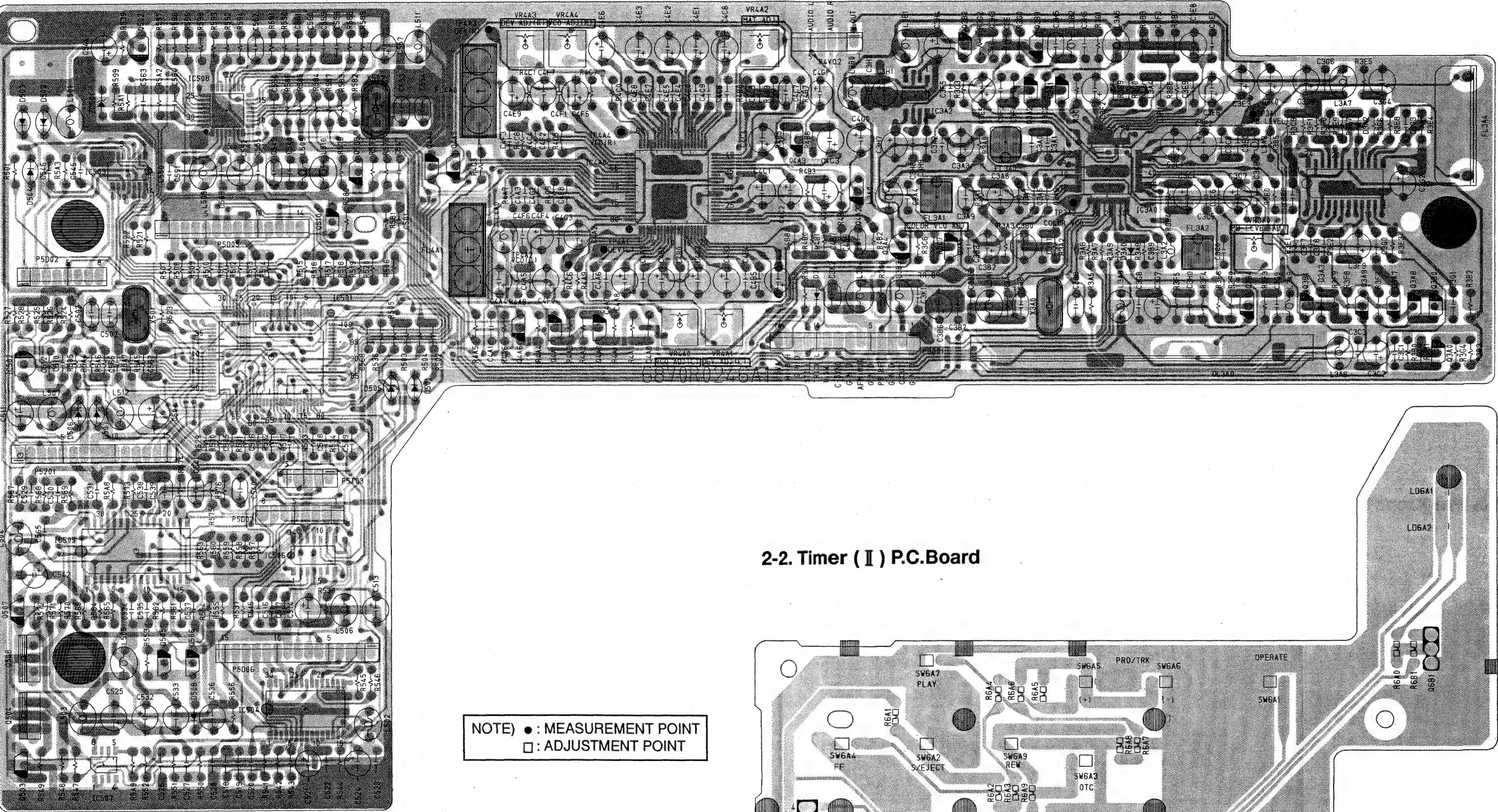
(Component Side)



(Solder Side)



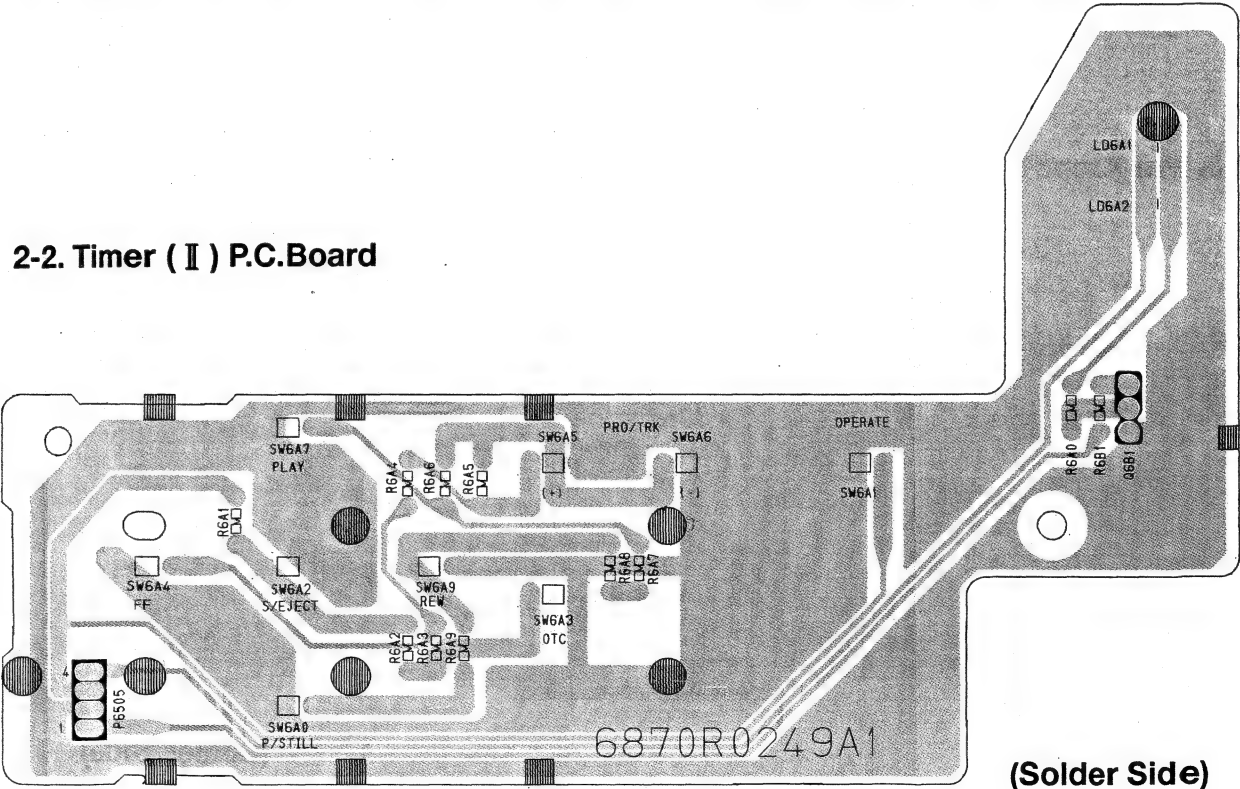
2. 8mm Printed Circuit Board  
2-1. Main P.C.Board



(Component Side)

NOTE) ● : MEASUREMENT POINT  
□ : ADJUSTMENT POINT

2-2. Timer ( I ) P.C.Board



(Solder Side)

A

B

C

3-91

D

3-92

E

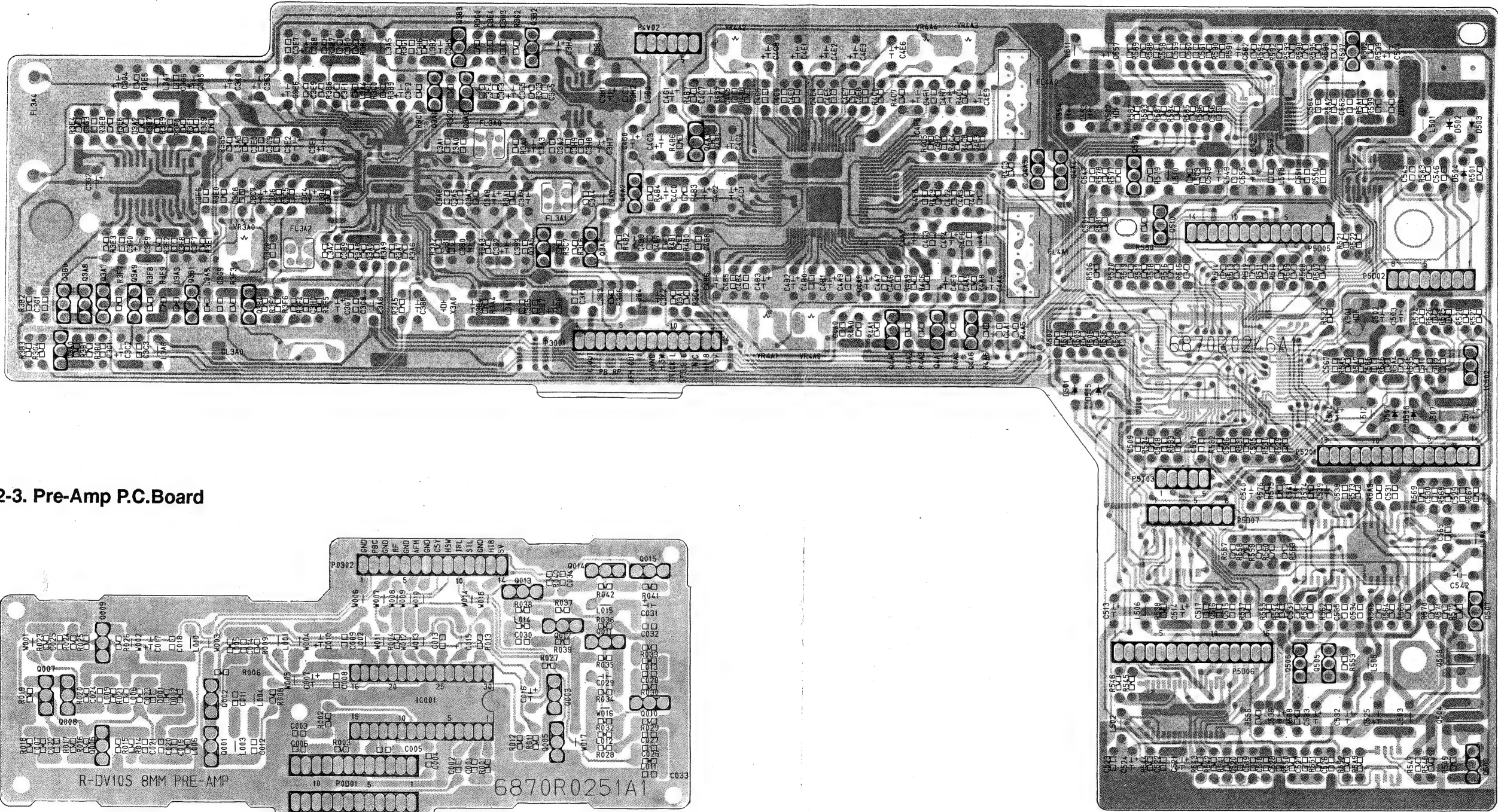
F

G

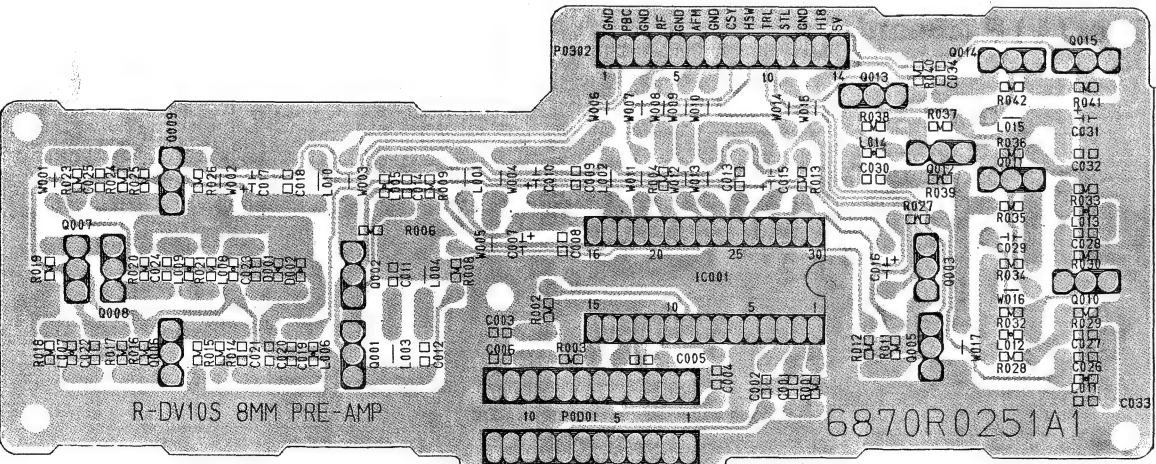
H



Main P.C.Board



2-3. Pre-Amp P.C.Board



(Solder Side)

(Solder Side)

A

B

C

D

E

F

G

H



\_\_\_\_\_

\_\_\_\_\_

**3-96**

# **SECTION 4 MECHANISM**

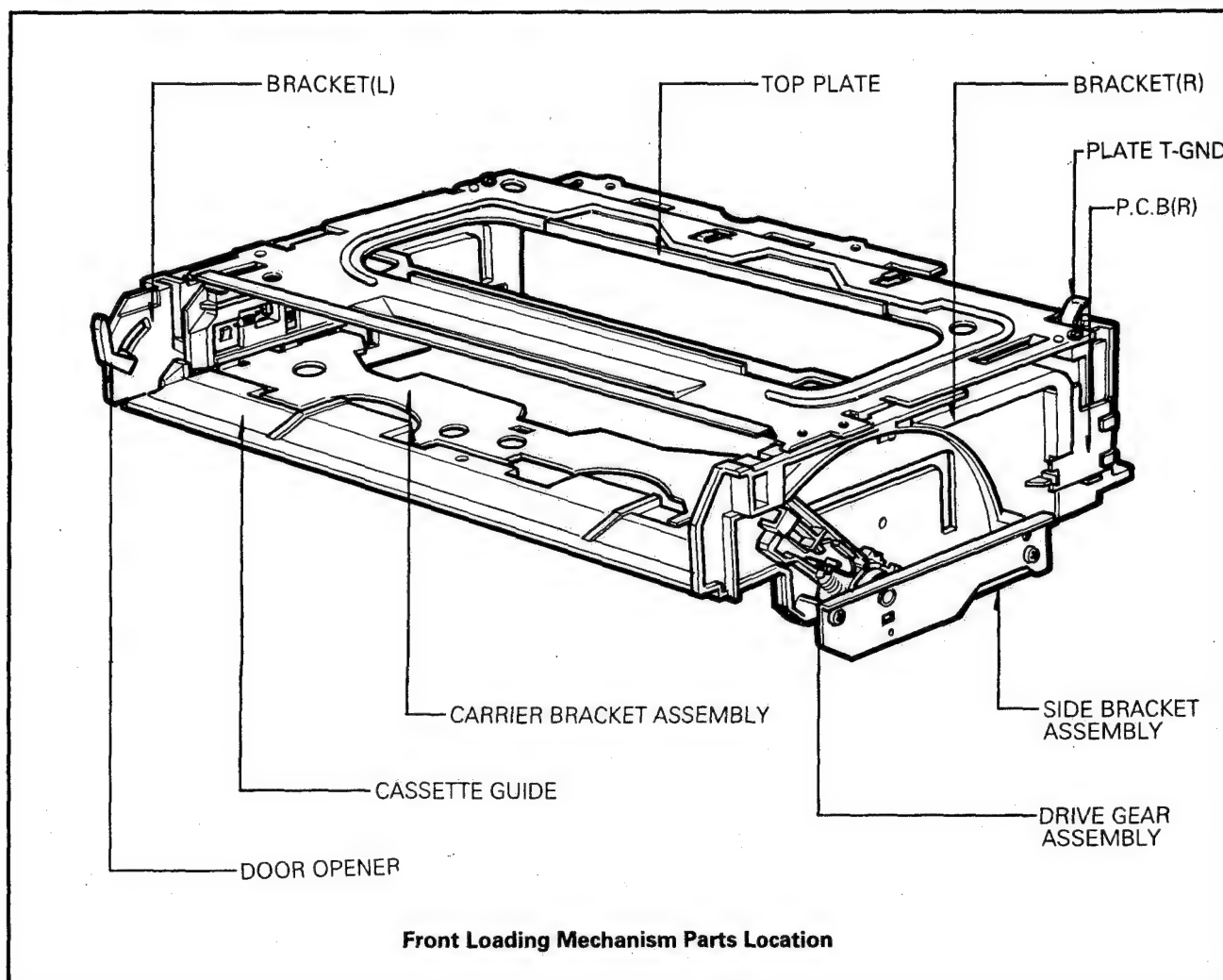
## **CONTENTS**

**SECTION 4-1  
VHS DECK MECHANISM**

**SECTION 4-2  
8mm DECK MECHANISM**

## SECTION 4-1. VHS DECK MECHANISM FRONT LOADING MECHANISM DISASSEMBLY

### • Front Loading Mechanism Parts Location



- |  |                          |
|--|--------------------------|
| 1. Component list below will be described as if the top and bottom covers and the front panel have already been removed. | 5. Cassette Guide        |
| 2. P.C.B Assembly  | 6. Side Bracket Assembly |
| 3. Top Plate   | 7. Bracket(L), (R)       |
| 4. Carrier Bracket Assembly  | 8. Door Opener           |
|  | 9. Drive Gear Assembly   |



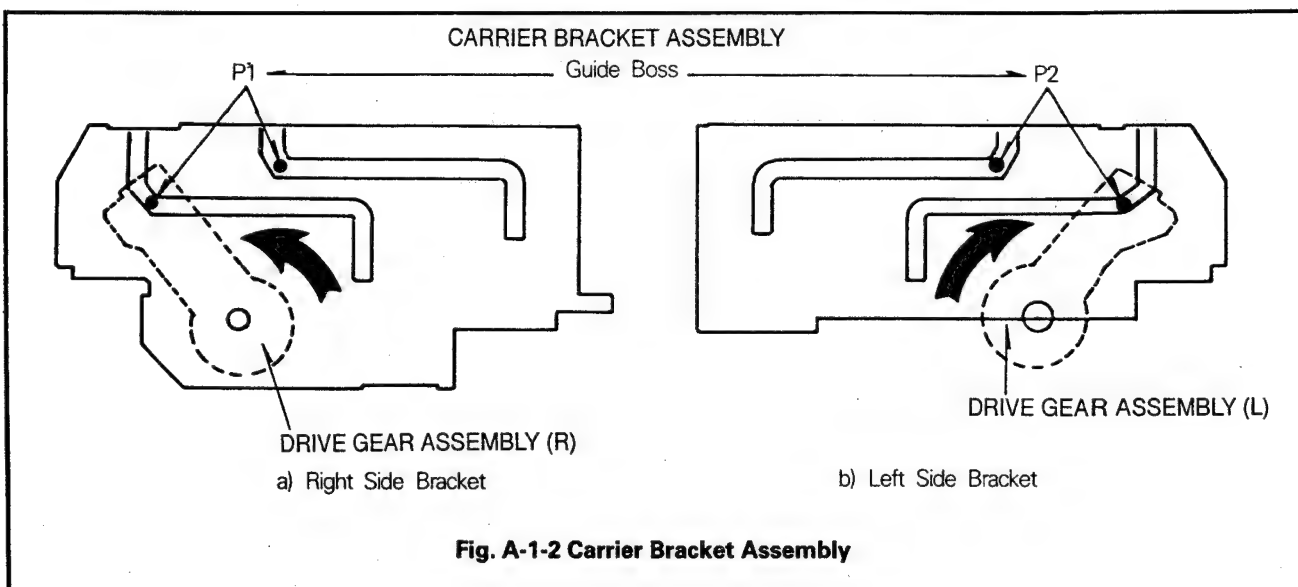
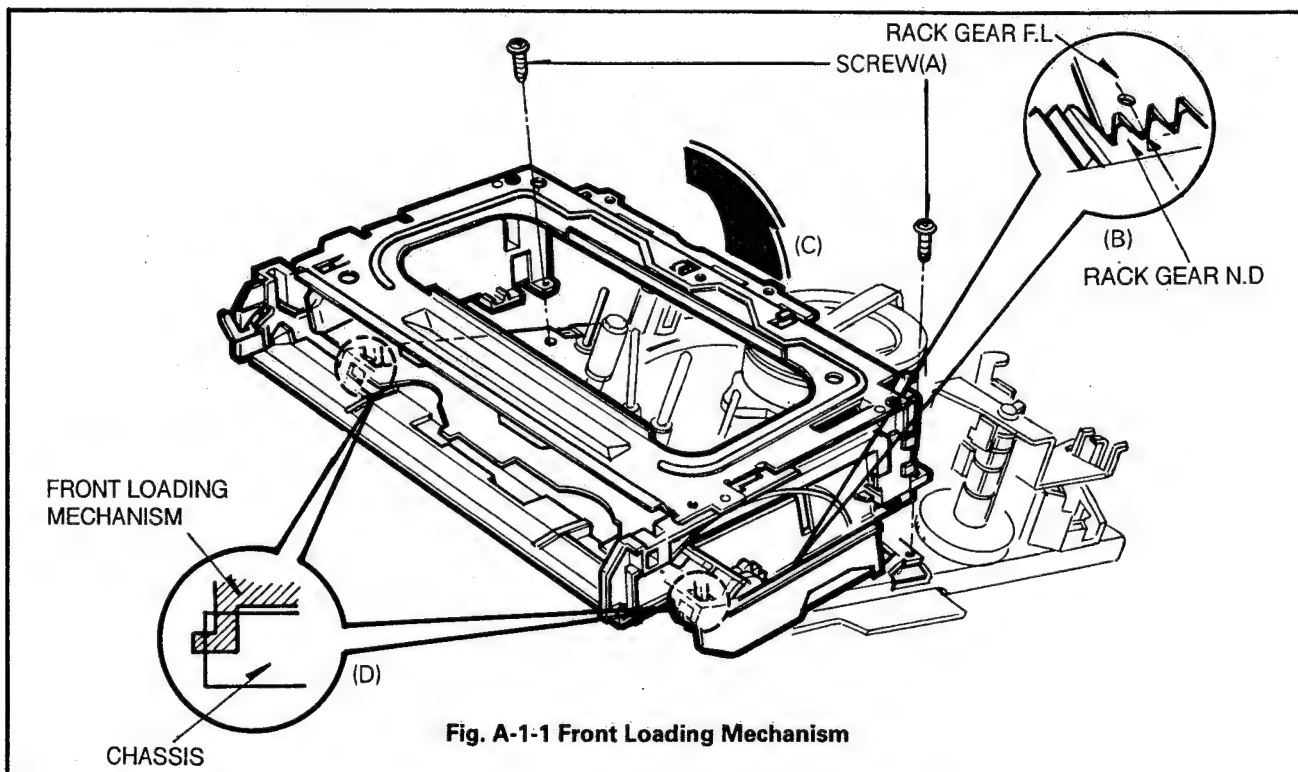
## 1. Front Loading Mechanism Assembly (Fig. A-1-1)

- 1) Remove the Top and Bottom Covers and the Front panel.
- 2) Unplug the connector.
- 3) Remove two screws(A).
- 4) Lift up the Front Loading Mechanism in the direction of arrow(C).

### \* NOTE

- 1) When disassembling and reassembling
- ① Give special attention to removal and to reassemble, because two tabs(D) are engaged.

- ② Make sure that Bosses of Bracket(L),(R) are properly engaged in the holes of the chassis.
- ③ To reassemble Front Loading Mechanism, the Drive Gear Assembly should be turned in a counterclockwise as shown in Fig. A-1-2 so that the Rack Gear N.D of Front Loading Mechanism Assembly is meshed into Rack Gear F.L of Deck Mechanism Assembly correctly as shown in Fig. A-1-1.(B).



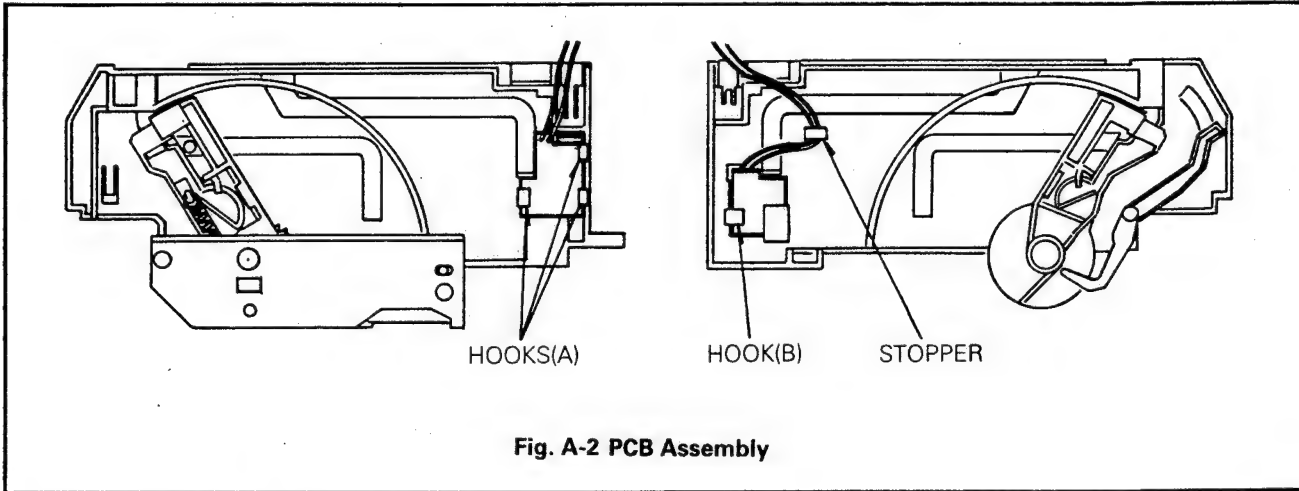
## 2. PCB(Printed Circuit Board) Assembly

### 2-1. P.C.B Assembly(R)(Fig. A-2)

- 1) Remove the PCB Assembly(R) by pushing three Hooks (A) outward.
- 2) Release the Lead wire from stoppers.

### 2-2. PCB Assembly(L).(Fig. A-2)

- 1) Remove the PCB Assembly(L) by pushing the Hook(B) outward.
- 2) Release the Lead Wire from stoppers.

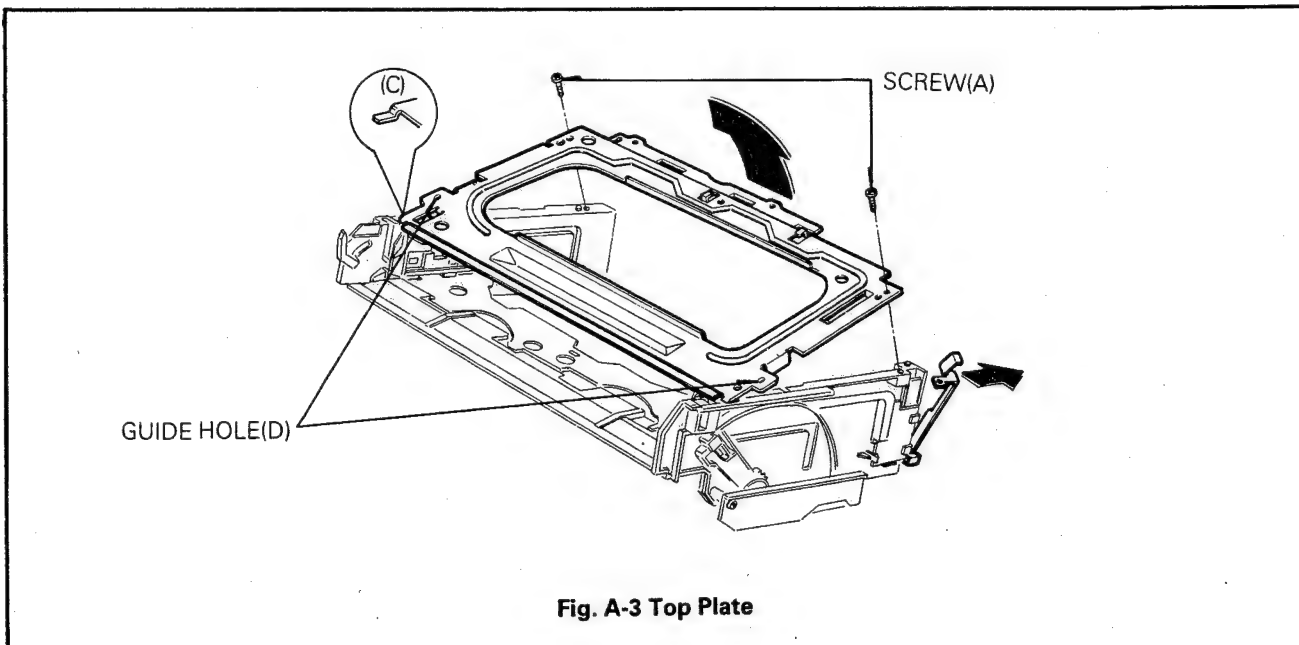


## 3. Top Plate(Fig. A-3)

- 1) Remove two screws(A).
- 2) Push the upper part of Top plate Ground and then lift up the Top Plate in the direction of arrow(B).

### \* NOTE

- 1) When reassembling, be certain that the tabs(C) of Top Plate is in both Bracket(L),(R).
- ① Then align the guide holes(D) of Top Plate with Bosses of side Bracket(L),(R).



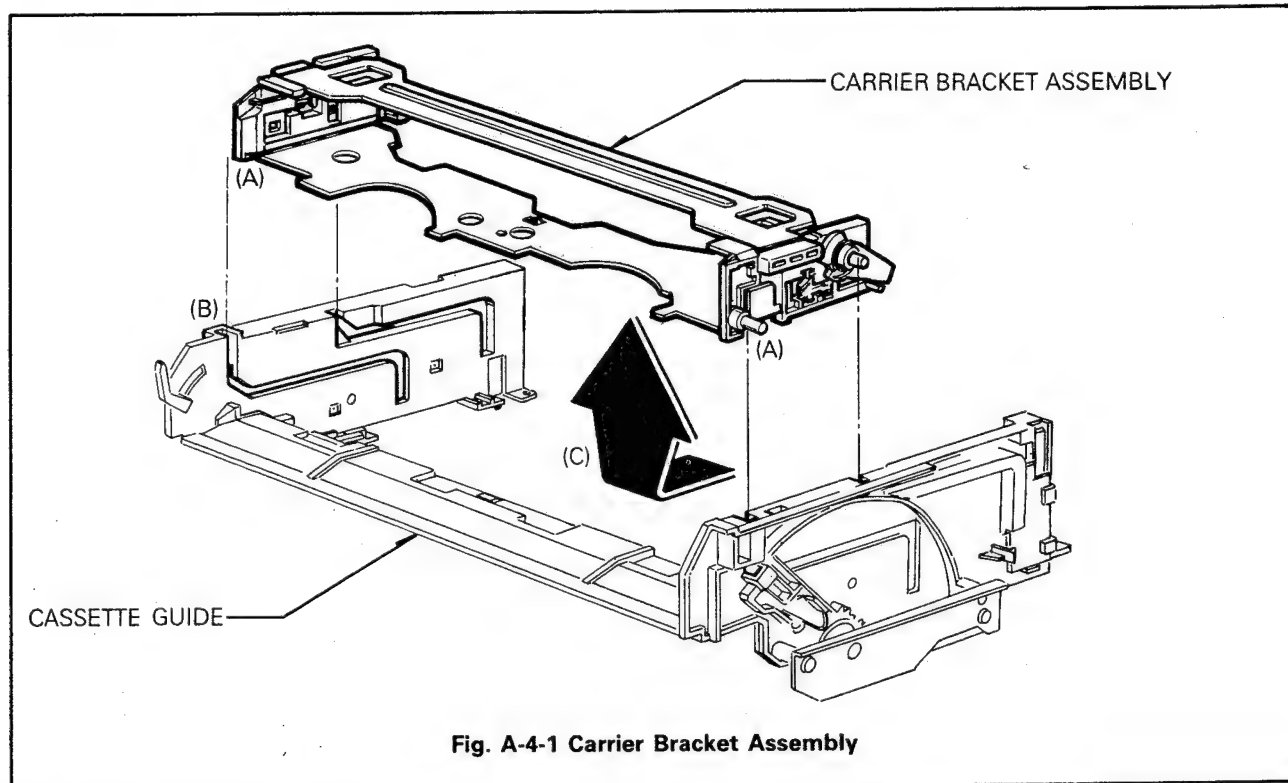
## 4. Carrier Bracket Assembly

### 4-1. Carrier Bracket Assembly(Fig. A-4-1)

- 1) Remove the Carrier Bracket Assembly by moving it in the direction of arrow(C).

#### \* NOTE

- 1) When reassembling, be sure that parts(A) of Carrier Bracket Assembly are seated in parts(B) of Bracket(L),(R).



### 4-2. Cassette Opener(Fig. A-4-2)

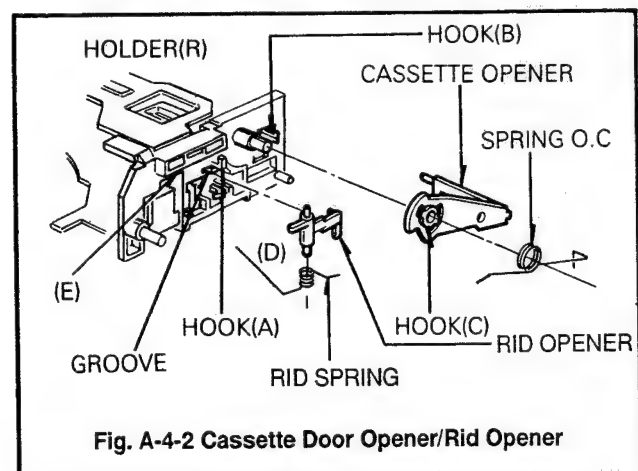
- 1) Release the spring O.C from the Hook(A) and then release it from Hook(C) of cassette opener.
- 2) Remove the cassette opener by releasing the Hook(B) from the Holder(R).

### 4-3. Rid Opener(Fig. A-4-2)

- 1) Remove the rid opener by pushing it outward.

#### \* NOTE

- 1) When reassembling, seat the upper part of the rid opener in the grooved of Holder(R) and push it inward.

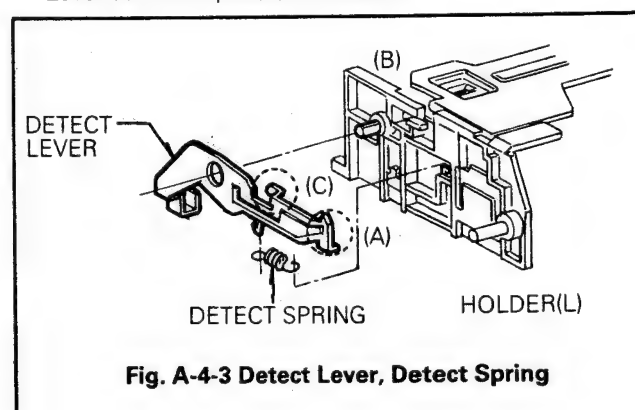


### 4-4. Detect Lever and Detect Spring

- 1) Remove the spring detect.
- 2) Lower the side(A) of Detect Lever and then remove the Detect Lever by pushing it outward.

#### \* NOTE

- 1) When reassembling, make sure that the part(C) of Detect Lever set in the part(B) of Holder(R).



#### 4-5. Support Bracket Assembly(Fig. A-4-4)

1) Take the Support Bracket out by releasing hooks(A),(B).

#### \* NOTE

1) When disassembling and reassembling, be careful because heavy force can damage the hooks.

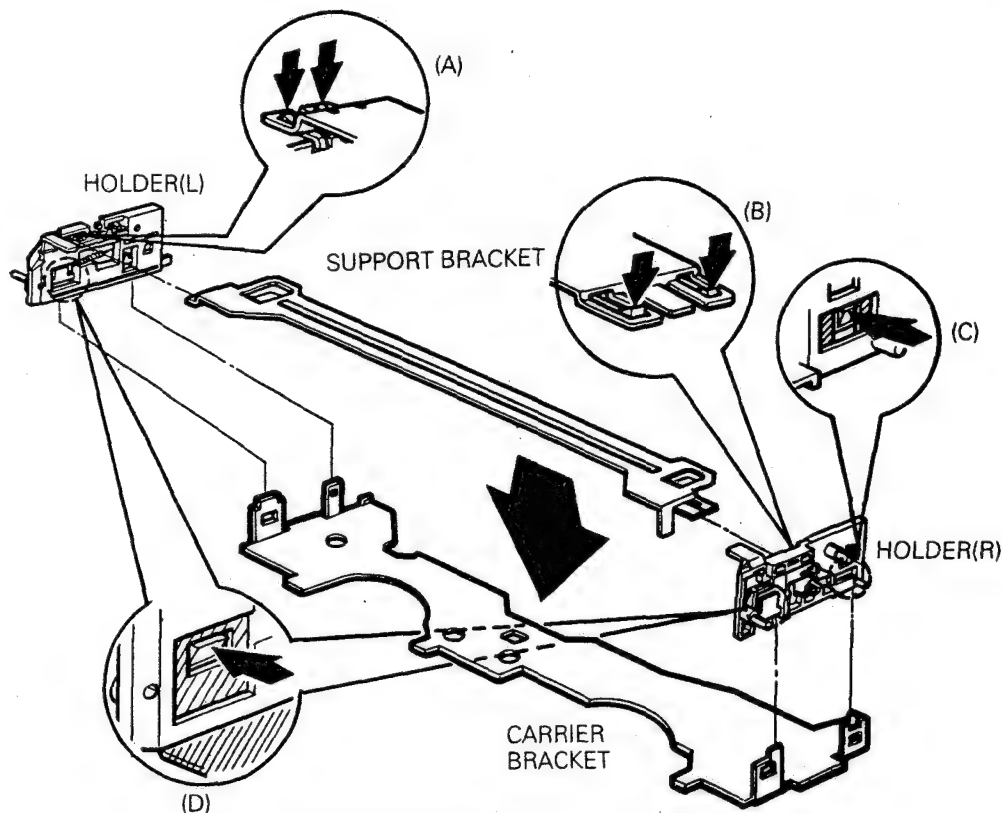


Fig. A-4-4 Support Bracket/Carrier Bracket

#### 4-6. Carrier Bracket Assembly(Fig. A-4-4)

1) Remove the Carrier Bracket by releasing hooks(C),(D).

#### 5. Cassette Guide(Fig. A-5)

- 1) Remove the Switch Spring with the Front Loading Mechanism Assembly turned over.
- 2) Push two hooks(B) outward.
- 3) Remove the Cassette Guide by pushing two hooks(A) outward(if one is removed, the other will be easy to remove)

#### \* NOTE

- 1) When reassembling
  - ① Seat projections(E) of Cassette Guide in holes of Bracket Assembly(L),(R) and then engage the Hook(A).
  - ② After finishing previous step, fix the Cassette Guide to the Bracket Assembly(L),(R) by pushing two hooks(B) inward.

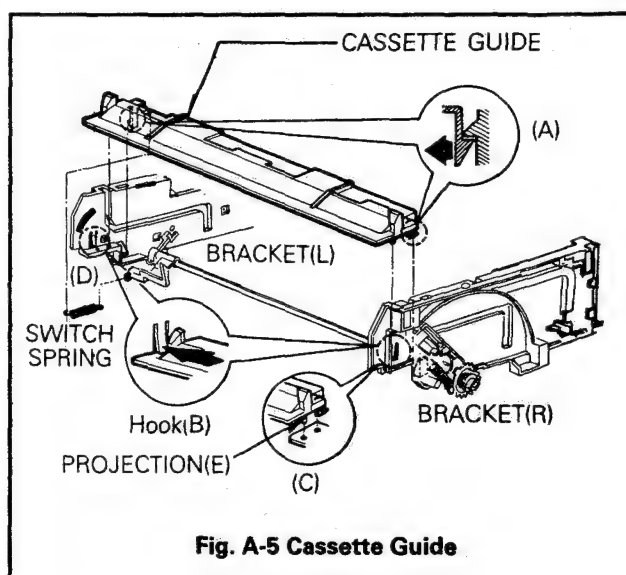


Fig. A-5 Cassette Guide

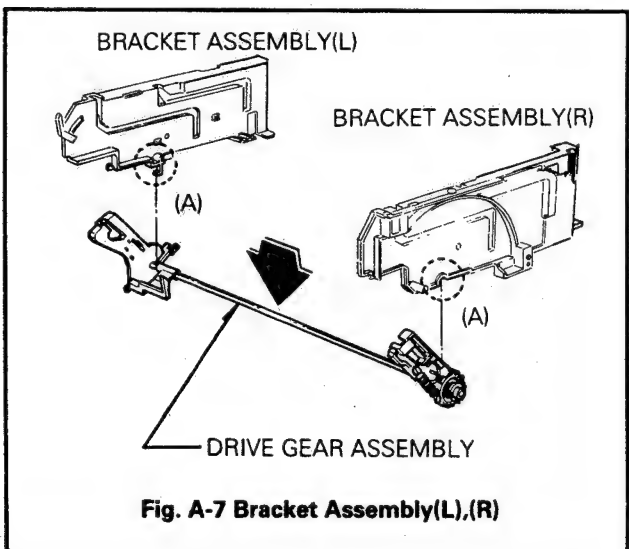
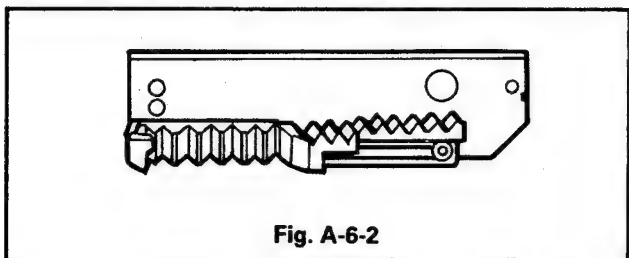
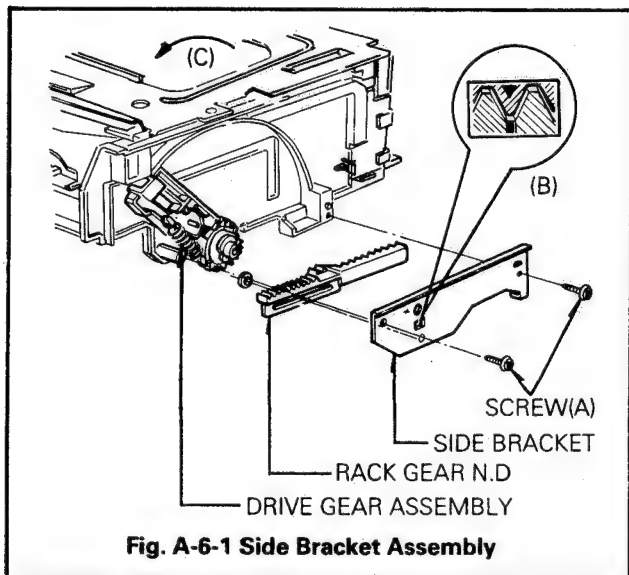


## 6. Bracket Assembly Side (Fig. A-6-1)

- 1) Remove two screws(A) and then remove the Side Bracket Assembly and the Rack Gear N.D.

### \* NOTE

- 1) When reassembling
  - ① Turn the Drive Gear Assembly in the direction of arrow (C).
  - ② Reassemble the Rack Gear N.D. to the Side Bracket Assembly, as shown in Fig. A-6-2, and then reassemble



it to the Bracket Assembly(L), This time the Assembling Figure should be the same as(B) at the rectangular hole of Bracket Side.

## 7. Bracket Assembly(L),(R)(Fig. A-7)

- 1) Separate the Bracket Assembly(L),(R) from the Gear Assembly Drive.

### \* NOTE

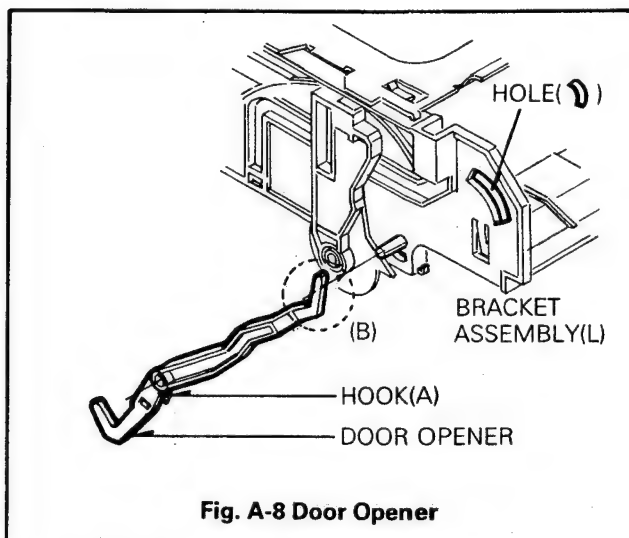
- 1) When reassembling, seat the shaft in the part(A) of Bracket Assembly(L),(R).

## 8. Door Opener(Fig. A-8)

- 1) Remove the Door Opener by pushing Hook(A) outward.

### \* NOTE

- 1) When reassembling, seat the part(B) of Door Opener in the hole( ) of Bracket(L).



## 9. Drive Gear Assembly

### 9-1. Drive Gear Assembly(Fig. A-9-1)

- 1) Remove the Drive Gear Assembly from the Bracket Assembly(L),(R).

### 9-2. Cushion Spring(Fig. A-9-1)

- 1) Remove the cushion spring from the Gear R.

### 9-3. Cap-D(Fig. A-9-1)

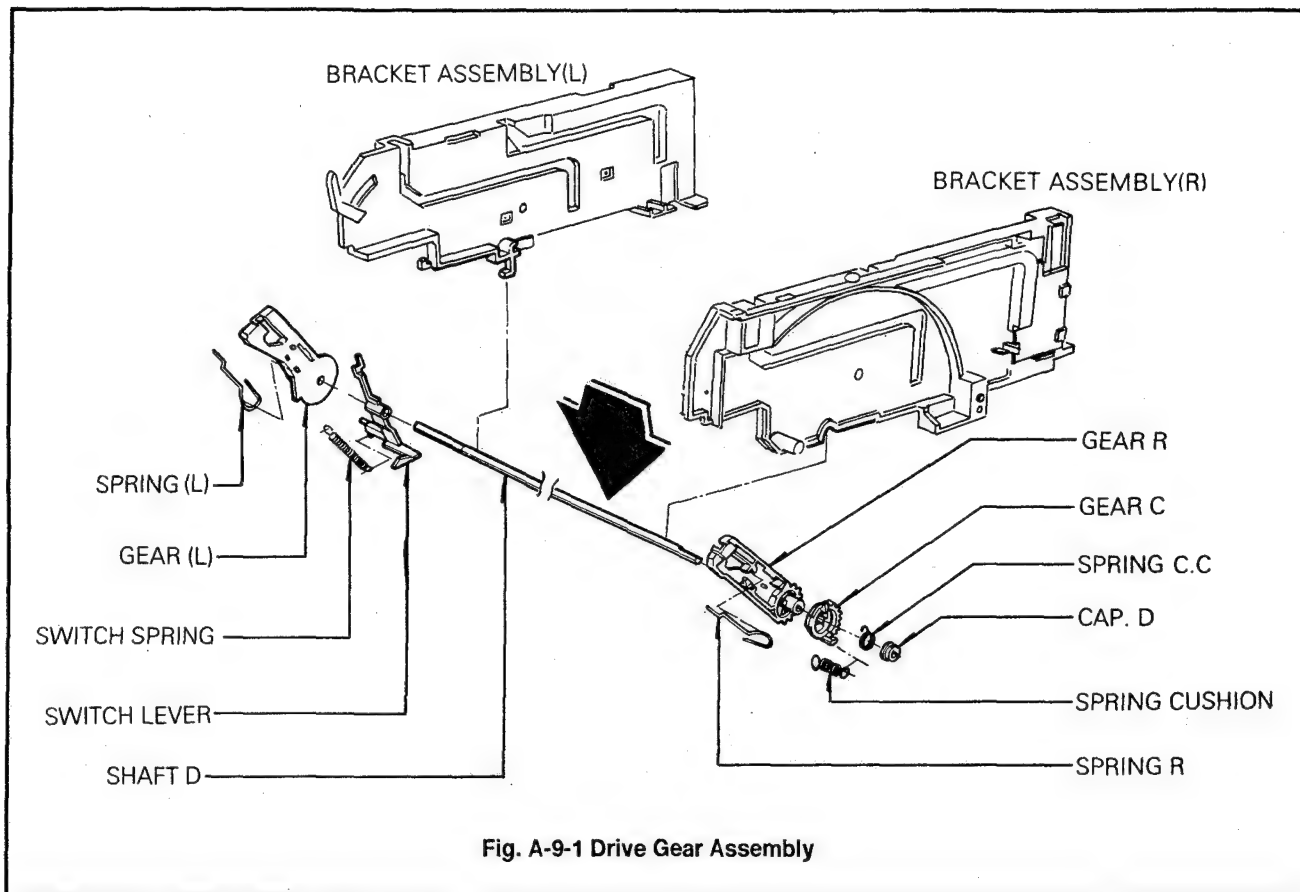
- 1) Remove the Cap-D by lifting it up.

### 9-4. Spring C.C(Fig. A-9-1)

- 1) Remove the Spring C.C from the Gear R.

### 9-5. Gear C(Fig. A-9-1)

- 1) Remove the Gear C by lifting up when the projection of Gear C is aligned with the hole of Gear R while rotating the Gear C in the counterclockwise direction.



**\* NOTE**

- 1) When reassembling, seat the projections of Gear R in the holes of Gear C when the projection of Gear R is aligned with the hole of Gear C, and then keep the Gear C turned in the clockwise direction.

**9-6. Gear R(Fig. A-9-1)**

- 1) Lift up the Gear R from the Shaft.

**9-7. Spring R(Fig. A-9-2)**

- 1) Remove the Spring R by releasing Hooks.

**\* NOTE**

- 1) When reassembling, be certain Spring R in the part(A) of Gear R.

**9-8. Gear L.(Fig. A-9-1)**

- 1) Remove the Gear L from the shaft.

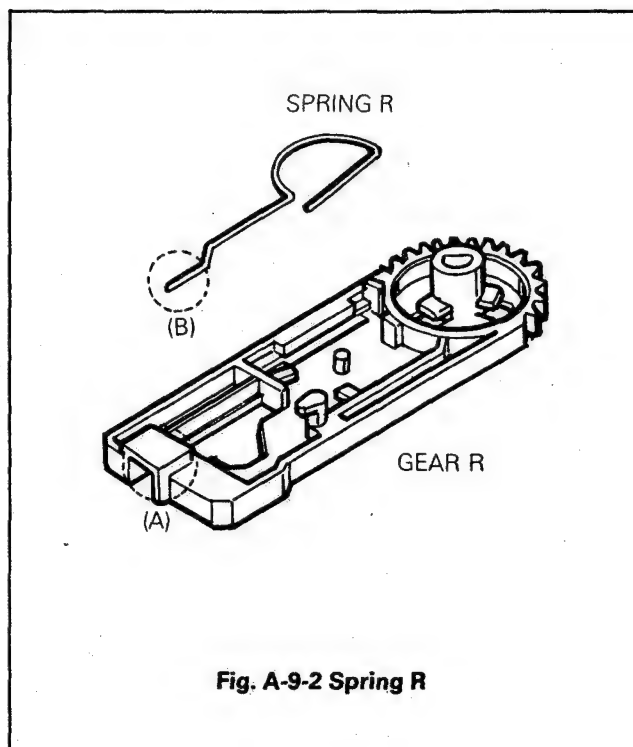
**9-9. Spring L (Fig. A-9-2)**

- 1) Remove the Spring L by releasing Hooks from the Gear L.

**\* NOTE:**(Refer to the Spring R Section)

**9-10. Switch Lever(Fig. A-9-1)**

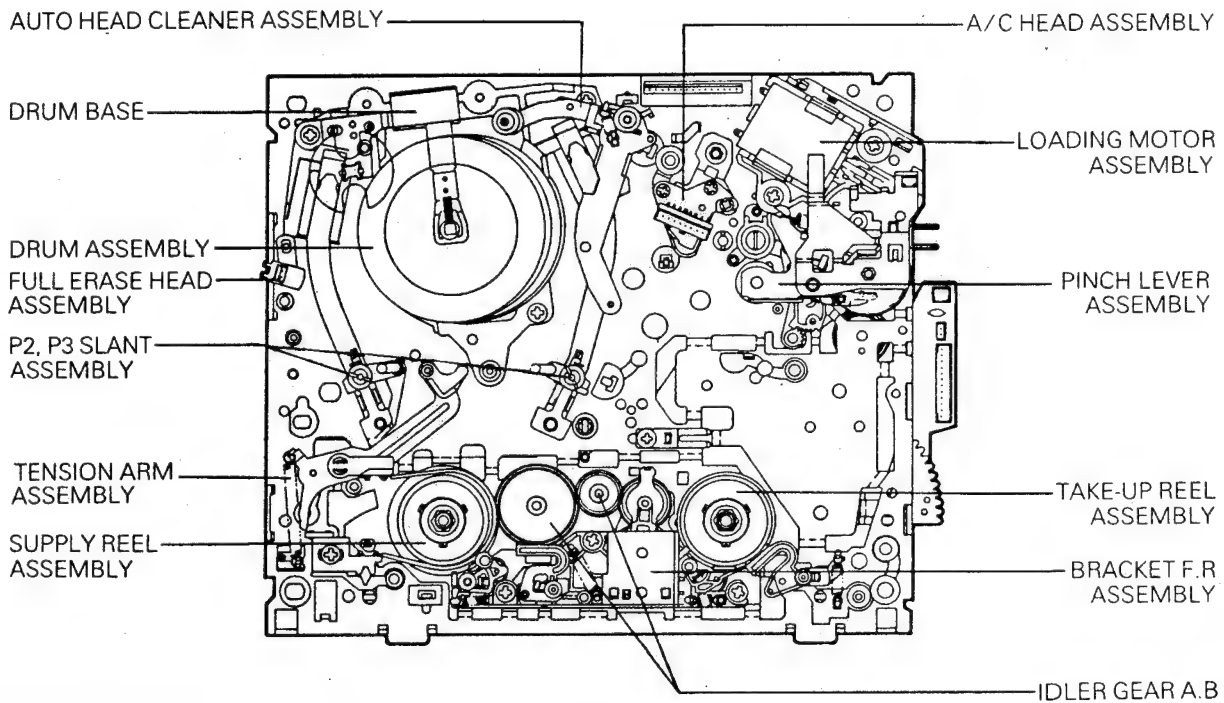
- 1) Remove the Switch Lever from the shaft.



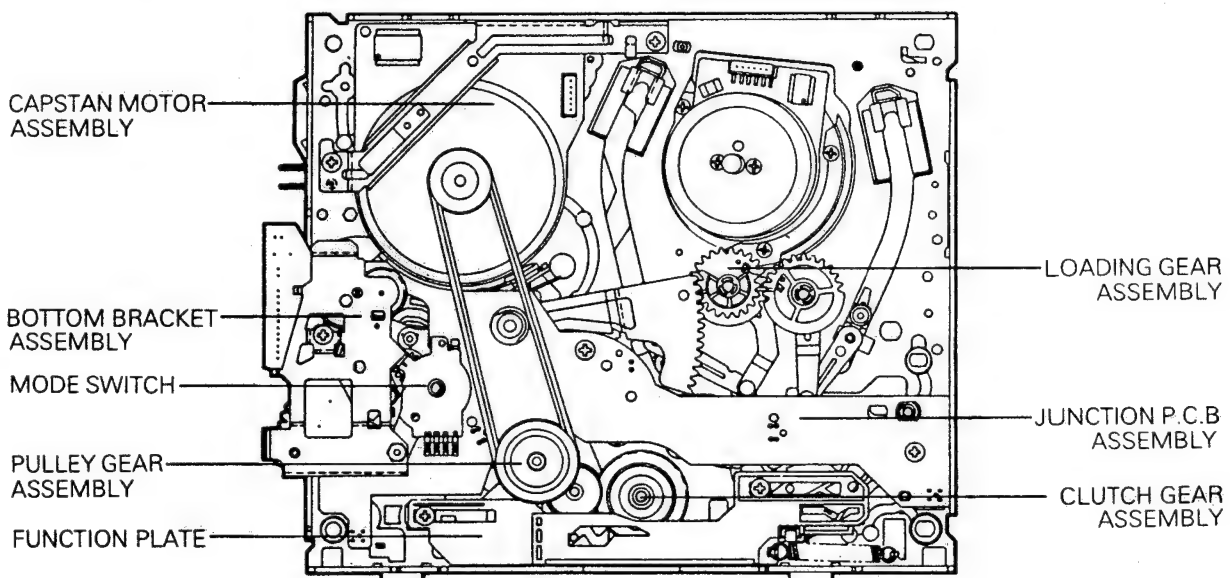
# DECK MECHANISM DISASSEMBLY

## • Deck Mechanism Parts Location

### Top Side



### Bottom Side



## 1. Auto Head Cleaner Assembly (Fig. B-1) (Optional Item)

- 1) Remove the Cleaner Arm Assembly (Auto Head Cleaner Assembly) by pushing the Locking Tab.(B) outward.
- 2) Remove the Cleaner Upper Spring and then remove the Cleaner Upper Arm Sub Assembly.
- 3) Remove the Cleaner Spring.

### • NOTE

- 1) When reassembling, do not touch the Video Head Tip with fingers or tools.

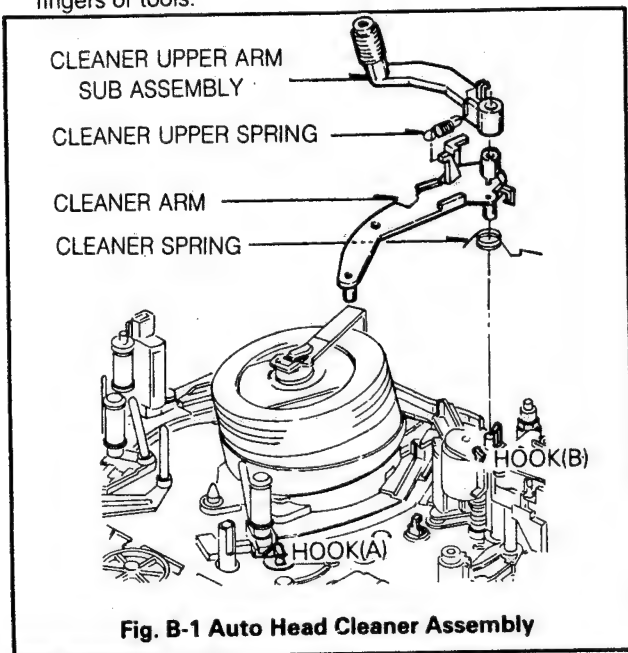


Fig. B-1 Auto Head Cleaner Assembly

## 2. Drum Assembly and Drum Base(Fig. B-2)

- 1) Remove the Auto Head Cleaner Assembly. (Option)
- 2) Unplug the connector with the Deck Mechanism Assembly turned over.
- 3) Loosen the screw(A) and then lift up the Drum Brush.
- 4) Remove two screws(B) and then lift up the Drum Assembly and Drum Base from the Deck Mechanism Assembly.
- 5) Separate the Drum Assembly from the Drum Base by Loosening three screws(C) on the back of Drum Base.

### • NOTE

- 1) When disassembling and reassembling
  - ① Do not touch the Video Head tip with fingers or tools. (Give special attention to disassembling and reassembling of Auto Head Cleaner Assembly)
  - ② After reinstalling the Drum Brush, the Drum Brush should be aligned with the center of vertical axis of Drum Assembly.
  - ③ After completing the reassembly, adjust the transportation system and the Servo P.G.

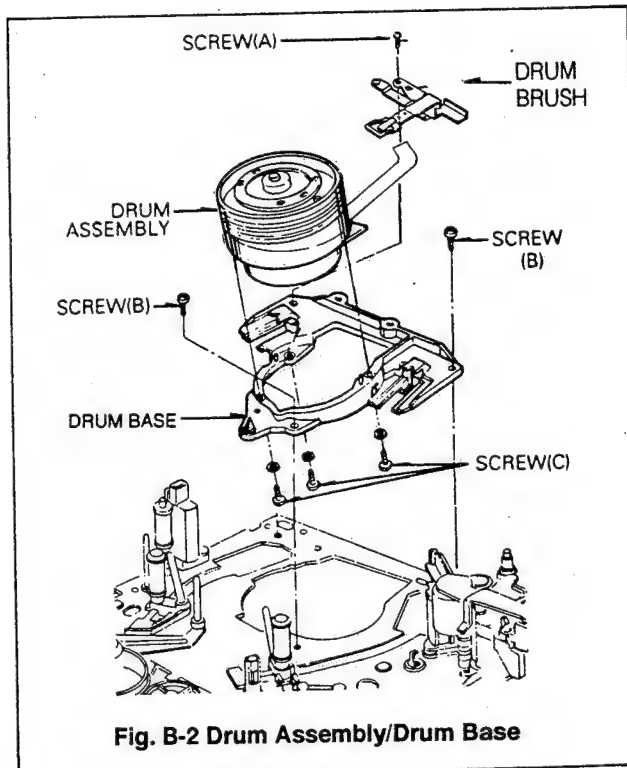


Fig. B-2 Drum Assembly/Drum Base

## 3. Drum Assembly

### 3-1. Drum Sub and Motor Assembly (Fig. B-3-1) : New Type (No two screws and P.C.B on the Drum)

- 1) Remove the Drum Base from the Deck Mechanism Assembly.
- 2) Separate the Drum Assembly from the Drum Base.
- 3) Remove two screws(A) and then remove the rotor.
- 4) Remove three screws(B) and then remove the stator.

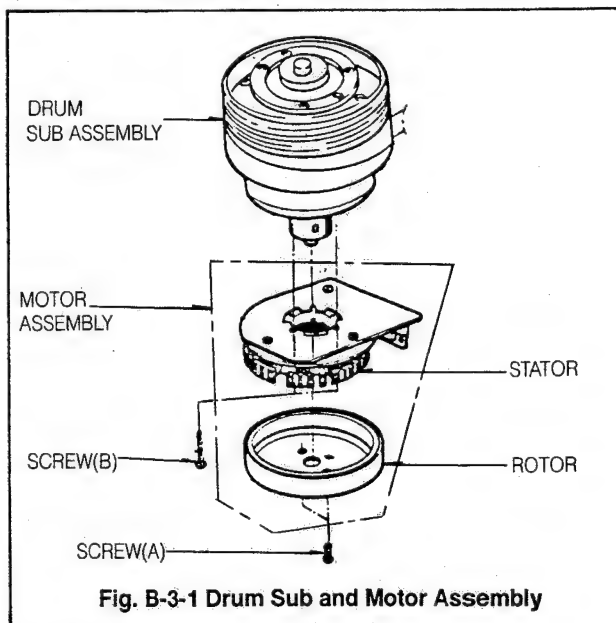


Fig. B-3-1 Drum Sub and Motor Assembly

### • NOTE

- 1) When disassembling and reassembling
  - ① Do not touch the Video Head Tip with fingers or tools.

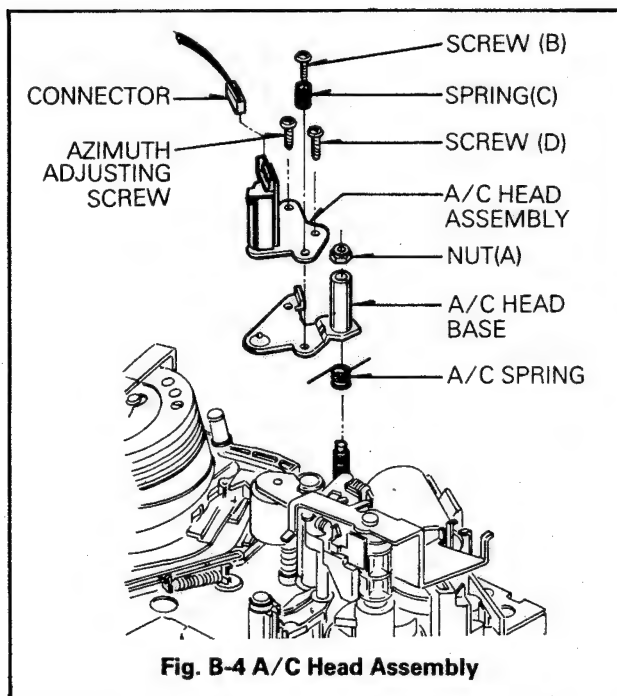
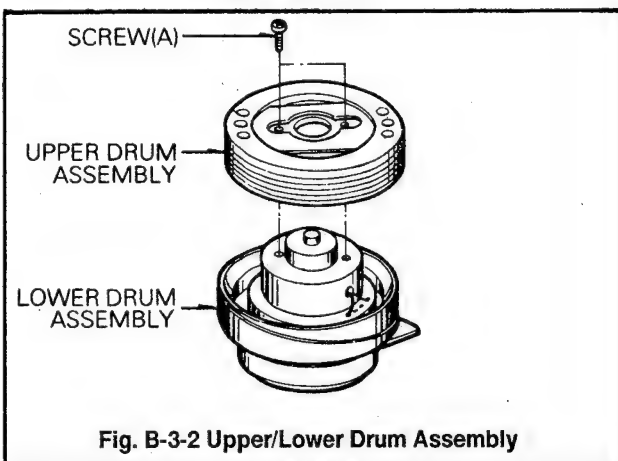


**3-2. Upper and Lower Drum Assembly (Fig. B-3-2)**  
: Old Type (There are two screws and P.C.B on the Drum)

- 1) Remove the Drum Assembly and Drum Base from the Deck Mechanism Assembly.
- 2) Separate the Drum Assembly from the Drum Base.
- 3) Remove two screws(A).
- 4) Remove the P.C.B.
- 5) Separate the upper Drum Assembly from the Lower Drum Assembly.

**\* NOTE**

- 1) When disassembling and reassembling
  - ① Do not touch the Video Head Tip with fingers or tools.
  - ② Make sure that the color(white) marked on the P.C.B of the upper Drum should coincide with the color(Green) marked on the Flange Assembly.



**4. A/C(Audio/Control) Head Assembly (Fig.B-4)**

- 1) Unplug the connector
- 2) Remove the Nut(A), and then lift up the A/C Head Assembly.
- 3) Remove the Azimuth Adjusting Screw.
- 4) Remove two screws(B),(D) and then separate the A/C Head Assembly from the Base A/C Head Assembly.

**\* NOTE**

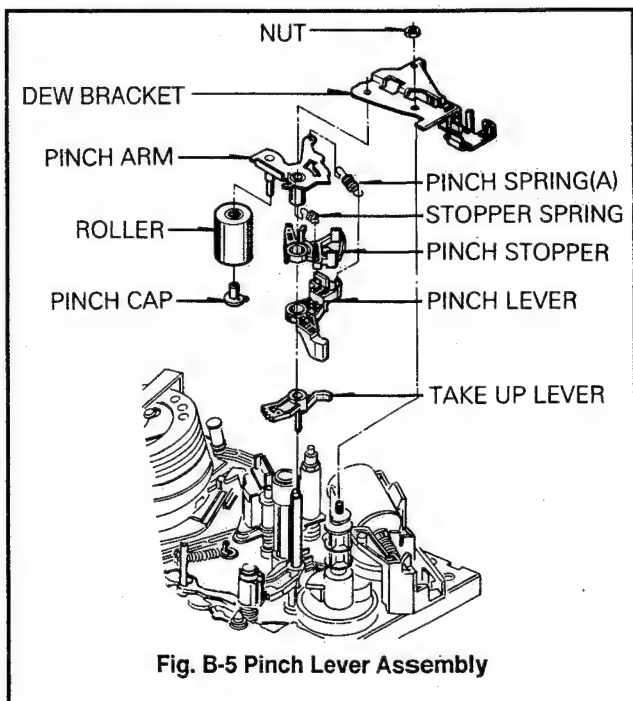
- 1) When disassembling
  - ① First of all, release the spring A/C.
  - ② Do not touch the A/C Head Tip with fingers or tools.
  - ③ After reinstalling the Audio Control Head Assembly, adjust the Tilt, Azimuth and Height of A/C Head.

**5. Pinch Lever Assembly(Fig. B-5)**

- 1) Remove one Nut, and then remove the Dew Bracket.
- 2) Lift up Pinch Lever Assembly.
- 3) Remove the Pinch Spring, and remove the Pinch Lever.
- 4) Remove the Stopper Spring and remove the Pinch Stopper by lifting it up when the Hook of Pinch Stopper is aligned with the hole of Pinch Arm while rotating the Pinch Stopper in the counterclockwise direction.
- 5) Remove the Pinch Cap, and then remove the Pinch Roller Assembly.

**\* NOTE**

- 1) When disassembling and reassembling
  - ① Be careful not to get any foreign substance on the Roller.
  - ② When disassembling the Pinch Cap, be careful not to damage the Pinch Arm.

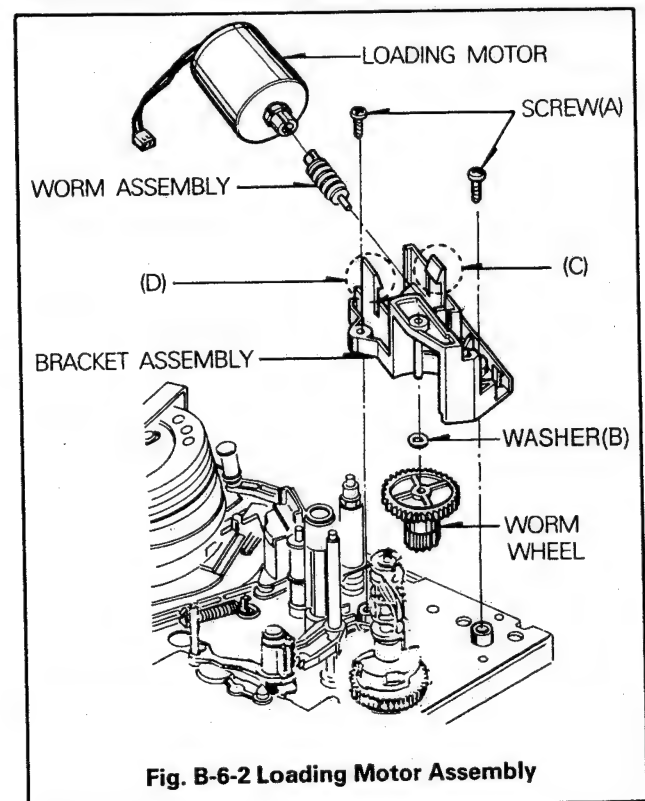
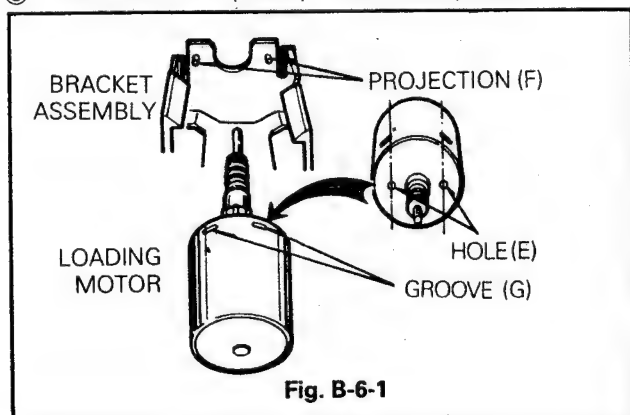


## 6. Loading Motor Assembly(Fig. B-6-1, B-6-2)

- 1) Remove the Dew Bracket.
- 2) Unplug the connector from the Junction P.C.B Assembly
- 3) Remove two screws(A).
- 4) Remove the worm wheel by pushing it down.
- 5) Remove the Loading Motor Assembly by pushing(C) and (D) outward.
- 6) Remove the worm Gear Assembly from the Loading Motor Assembly by pushing it.

### \* NOTE

- 1) When reassembling
  - ① Make sure that the worm assembly is seated in the axis of Loading Motor.
  - ② Two grooves(G) of Loading Motor should be turned up and two projections(F) of Bracket Assembly should be seated in each at the two holes(E)(Fig. B-6-1).
  - ③ Take notice of the polarity of the Loading Motor.

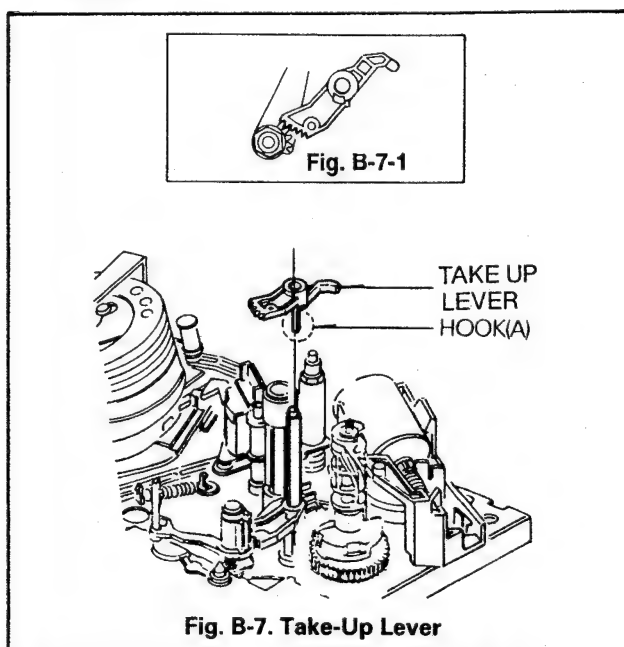


## 7. Take Up Lever(Fig. B-7)

- 1) Remove the Loading Motor Assembly.
- 2) Remove the Dew Bracket(Fig. B-5).
- 3) Remove the Pinch Lever Assembly(Fig. B-5).
- 4) Keep the Pinch Gear turned in the clockwise direction (180°).
- 5) Remove the Take-Up Lever by pushing the hook(A) cutward.

### \* NOTE

- 1) When disassembling and reassembling
  - ① When disassembling the Take-Up Lever, be careful not to break the Hook(A).
  - ② When reassemble the Take-Up Lever, align the appendant Gear of Lever Take-Up with the appendant Gear of Take-up Arm
  - ③ Reassemble the Take-Up Lever completely by hooking (A).
  - ④ Be sure to replace together Take-Up Lever and Pinch Gear.
  - ⑤ Be sure to assemble Pinch Lever Assembly before operating.

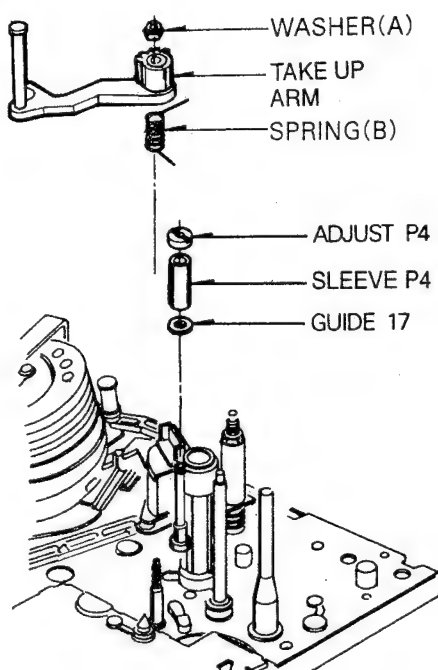


## 8. Take Up Arm Assembly(Fig. B-8)

- 1) Remove the Loading Motor Assembly.
- 2) Remove the Dew Bracket, Pinch Gear, and the Take-Up Lever.
- 3) Remove one Washer(A).
- 4) Remove the Take-Up Arm Assembly by lifting it up.
- 5) Remove the spring(B).

### \* NOTE

- 1) When reassembling
  - ① Align the Gear of Take-Up Arm with the Gear of Take-Up Lever(Fig. B-7-1).



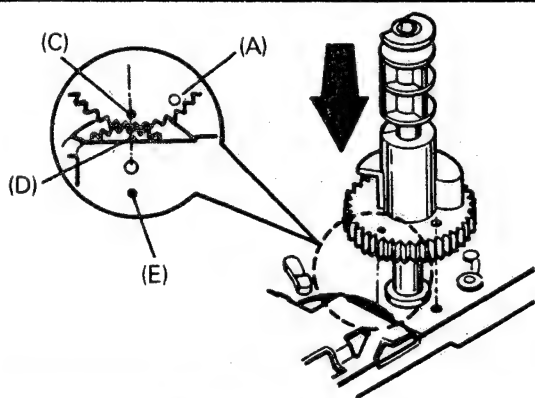
**Fig. B-8 Take-Up Arm Assembly/P4**

### 9. P4 Assembly(Fig. B-8)

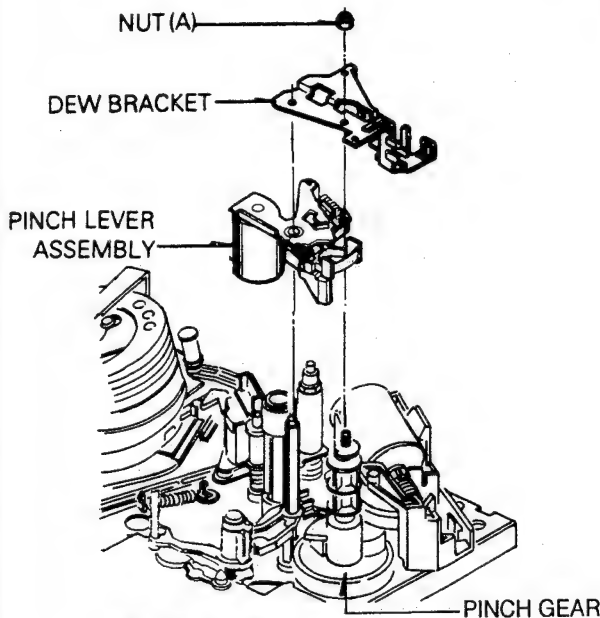
- 1) Remove the Adjust P4.
- 2) Remove the Sleeve P4.
- 3) Remove the Guide 17.

### 10. Pinch Gear(Fig. B-10-1, B-10-2)

- 1) Remove the Loading Motor Assembly.
- 2) Remove one Nut(A) and then remove the Dew Bracket (Fig. B-5).
- 3) Remove the Pinch Lever Assembly by lifting it up(Fig. B-5)
- 4) Keep the Pinch Gear turned in the clockwise direction (180°).
- 5) Remove the Take-Up Lever by pushing the hook(A) outward(Fig. B-7).
- 6) Keep the Pinch Gear turned in the counterclockwise direction (180°).
- 7) Remove the Pinch Gear Assembly.



**Fig. B-10-2 Pinch Gear**



**Fig. B-10-1 Pinch Gear Assembly**

#### \* NOTE

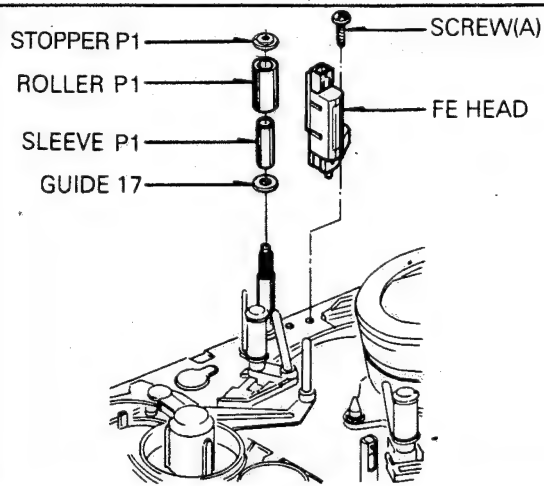
- 1) When reassembling, align the hole(A) of Pinch Gear with the hole of chassis, and the hole(C) of Pinch Gear with the groove(D) of the P.C.Gear. Hole(E) of chassis should be aligned with the hole of P.C.Gear.
- 2) Be sure to replace together Take-Up Lever and Pinch Gear.
- 3) Be sure to assemble Pinch Lever Assembly before operating.

### 11. FE(Full Erase) Head Assembly(Fig. B-11) (Optional Item)

- 1) Unplug the connector.
- 2) Remove one screw(A), and then remove the FE Head.

#### \* NOTE

- 1) When disassembling and reassembling
- ① Do not touch the Video Head Tip with fingers or tools.



**Fig. B-11 FE Head/P1**

## 12. P1 Assembly(Fig. B-11)

- 1) Remove the Stopper P1.
- 2) Remove the Roller P1.
- 3) Remove the Sleeve P1.
- 4) Remove the Guide 17.

## 13. Tension Arm Assembly(Fig. B-13)

- 1) Remove one screw(C).
- 2) Remove the Tension Spring.
- 3) Remove the Tension Arm Assembly by pushing hooks outward with the Deck Mechanism Assembly turned over.
- 4) Remove the Tension Band Assembly from the Tension Arm by pushing Hooks of Holder(A).

### • NOTE

- 1) When disassembling and reassembling, give special attention to the disassembling and reassembling of Tension Arm Assembly, because the Tension Band is interposed between the Supply Reel and the Soft Brake.

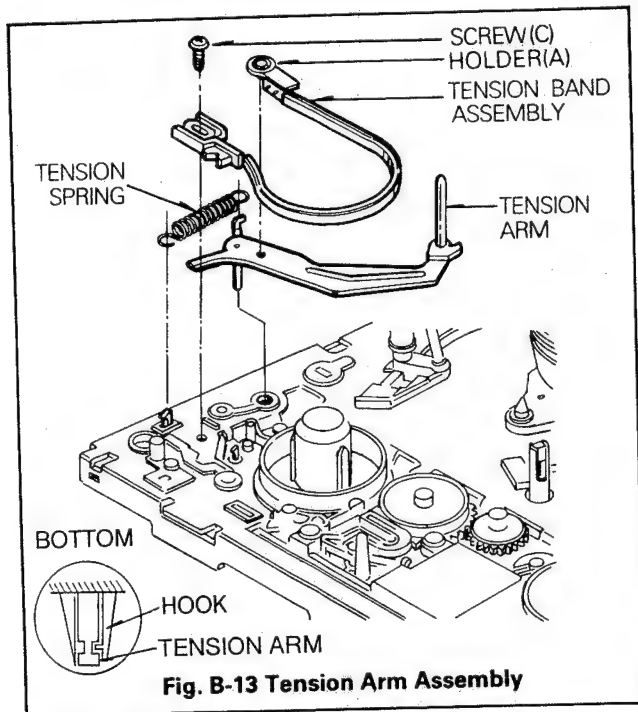


Fig. B-13 Tension Arm Assembly

## 14. Supply Soft/Supply Main/Take-Up Soft/Take-Up Main Brake Assembly

- 1) Supply Soft Brake(SSB)
  - ① Remove the SSB Spring.
  - ② Remove the SSB.
- 2) Supply Main Brake(SMB)
  - ① Remove the SMB Spring.
  - ② Remove the SMB.
- 3) Take Up Soft Brake(TSB)
  - ① Remove the TSB Spring.
  - ② Remove the TSB.
- 4) Take-Up Main Brake(TMB)
  - ① Remove the TMB Spring.
  - ② Remove the TMB.

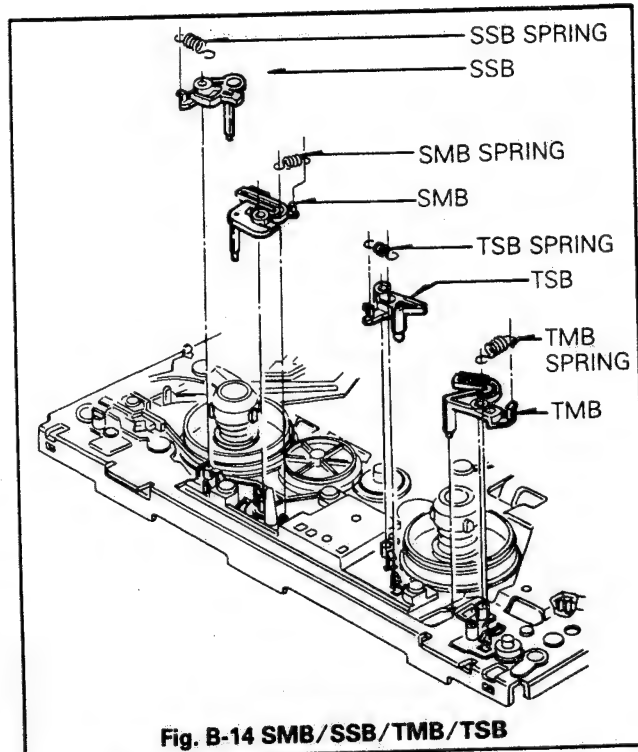


Fig. B-14 SMB/SSB/TMB/TSB

## 15. Bracket F/R(FF/Rewind) Assembly (Fig. B-15)

- 1) Remove the TMB.
- 2) Remove the Washer(A), and then remove the Gear F.R.
- 3) Remove three screws, and then remove Bracket F/R Assembly from the Deck Mechanism Assembly.
- 4) Remove the Washer(B), and spring Up/D, and then remove the Gear Up/D.
- 5) Remove the shaft(C), and then remove the Arm F.R, Lever F.R and Spring F.R.

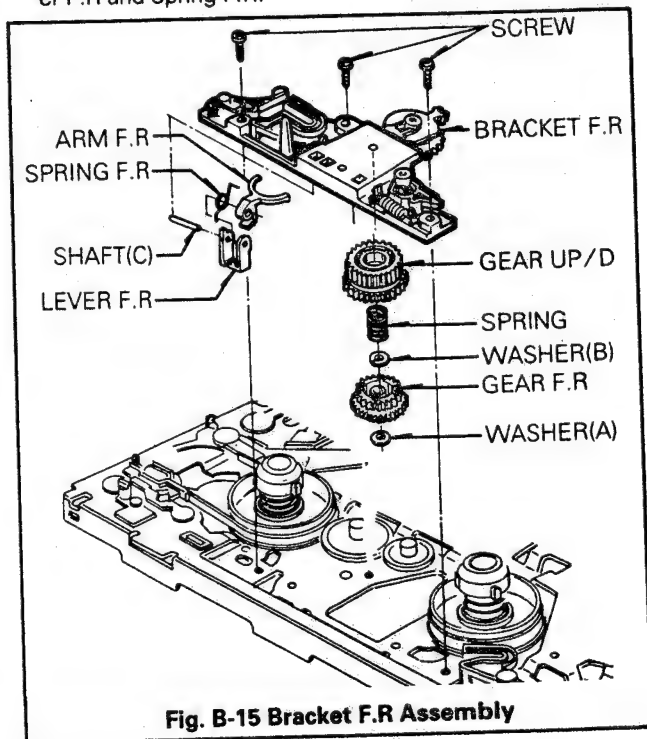


Fig. B-15 Bracket F.R Assembly



## 16. Supply Reel Assembly(Fig. B-16)

- 1) Remove the Tension Band Assembly.
- 2) Remove the Bracket F/R.
- 3) Lift up the Supply Reel Assembly from the Deck Mechanism Assembly.

## 17. Take Up Reel Assembly(Fig. B-16)

- 1) Remove the TMB(Fig. B-14)
- 2) Lift up the Take-up Reel Assembly from the Deck Mechanism Assembly.

### \* NOTE

- 1) When reassembling
  - ① Make sure that the Supply and Take Up Reel are not exchanged.
  - ② After reinstalling the Supply Reel Assembly, Adjust the Tension.

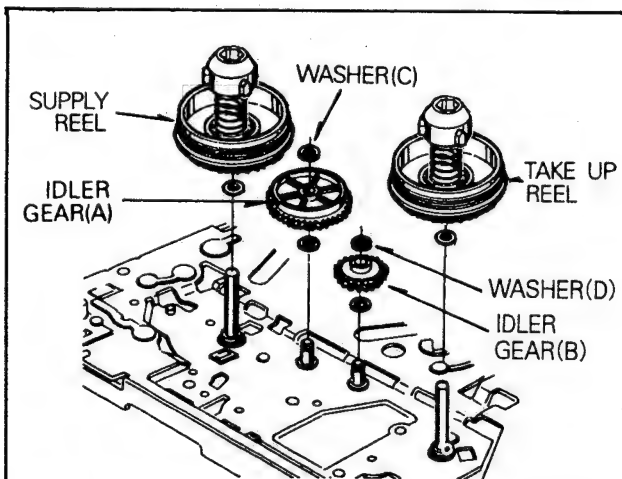


Fig. B-16 Supply Reel Assembly/Take-Up Reel Assembly

## 18. Idler Gear(A), (B)(Fig. B-16)

- 1) After removing the Supply Reel and supply Main Brake Assembly, remove the washer(C) and then remove the Idler Gear(A).
- 2) Remove the Washer(D) and remove the Idler Gear(B).

## 19. Pulley Gear Assembly(Fig. B-19)

- 1) Turn over the Deck Mechanism Assembly.
- 2) Remove the Capstan Belt.
- 3) Remove the Washer(A) and lift up the Pulley Gear.

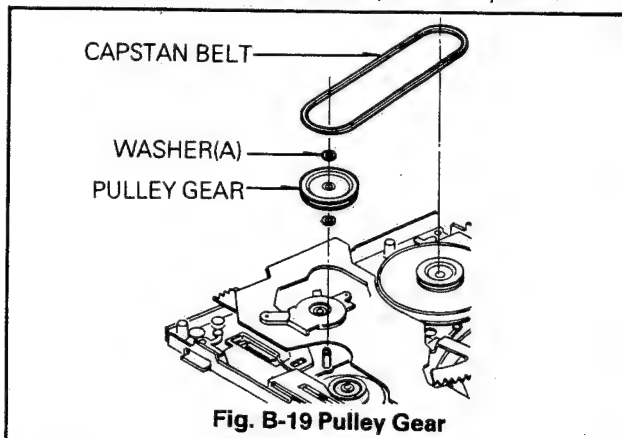


Fig. B-19 Pulley Gear

## 20. Bracket Bottom Assembly(Fig. B-20)

- 1) Remove one screw(A).
- 2) Remove one Hexagonal Nut, and then lift up the Bracket Bottom Assembly.
- 3) Remove one Washer(C), and lift up the Ratchet Gear 1.
- 4) Remove the washer(D), and then remove Ratchet Gear 3 from the Bracket Bottom.

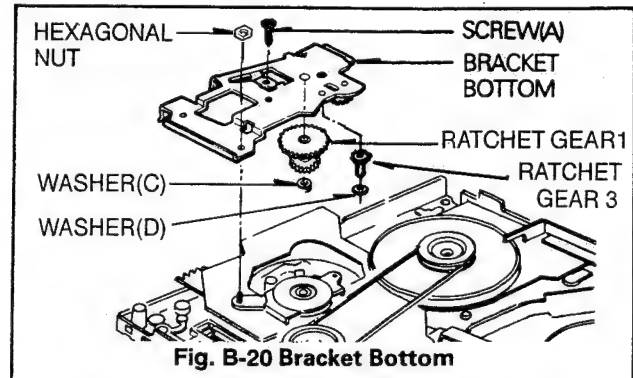


Fig. B-20 Bracket Bottom

## 21. Junction PCB(Printed Circuit Board) Assembly(Fig. B-21-1)

- 1) Remove the Bracket Bottom Assembly.
- 2) Remove two screws(A), (B) and then remove the Junction P.C.B Assembly.
- 3) Remove the Mode Switch from the Junction P.C.B Assembly.
- 4) Remove the Reel Sensor, Sensor LEDS and each holder from the Junction P.C.B(Fig. B-21-2).

### \* NOTE

- 1) When reassembling the Mode Switch, the groove(V) and (U) of Mode Switch should be at their original place in the Eject Mode.

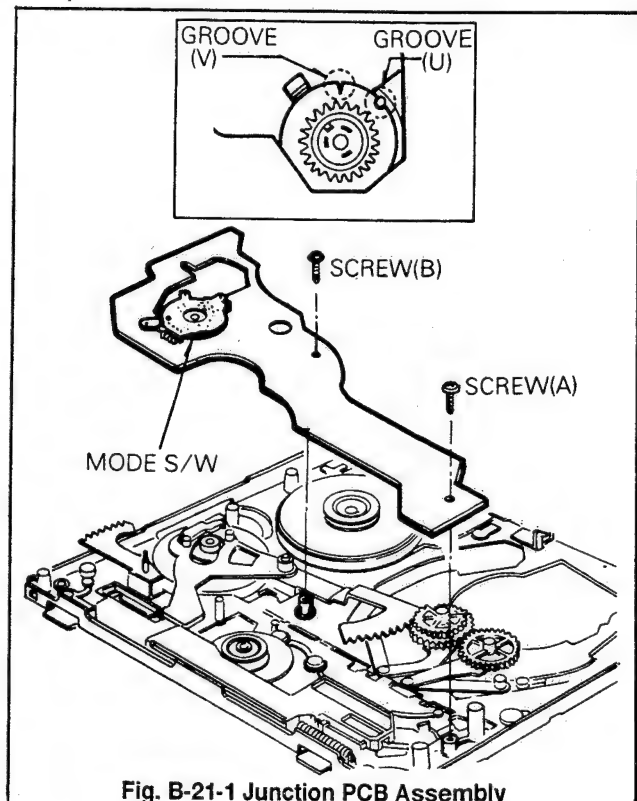


Fig. B-21-1 Junction PCB Assembly

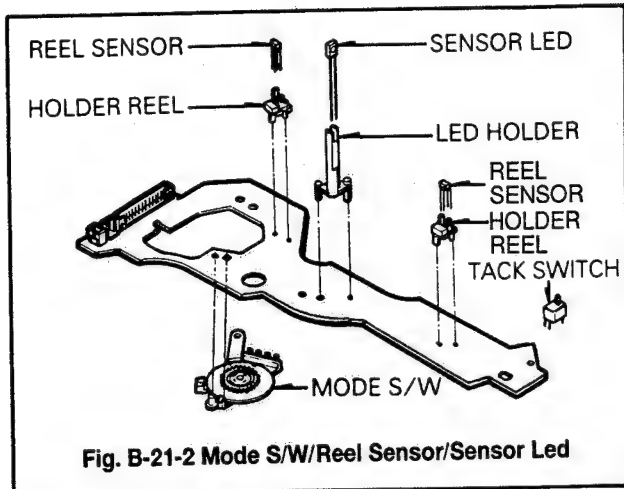


Fig. B-21-2 Mode S/W/Reel Sensor/Sensor Led

## 22. Capstan Motor and Brake Assembly (Fig. B-22-1)

- 1) Remove the Junction P.C.B Assembly
- 2) Hook the end of Capstan Brake Spring to the projection of Capstan Brake and then remove the Capstan Brake Assembly by lifting it up (Fig. B-22-2).
- 3) Remove two Screws(A), and then remove the Bracket C-Guide.
- 4) Remove the Connector.
- 5) Remove three screws(B), and then remove the Capstan Motor Assembly from the Deck Mechanism Assembly.

### \* NOTE

- 1) When disassembling and reassembling, hook end of the spring on the projection of Cap-Brake and remove it by lifting it up. Reassemble it in the opposite manner.

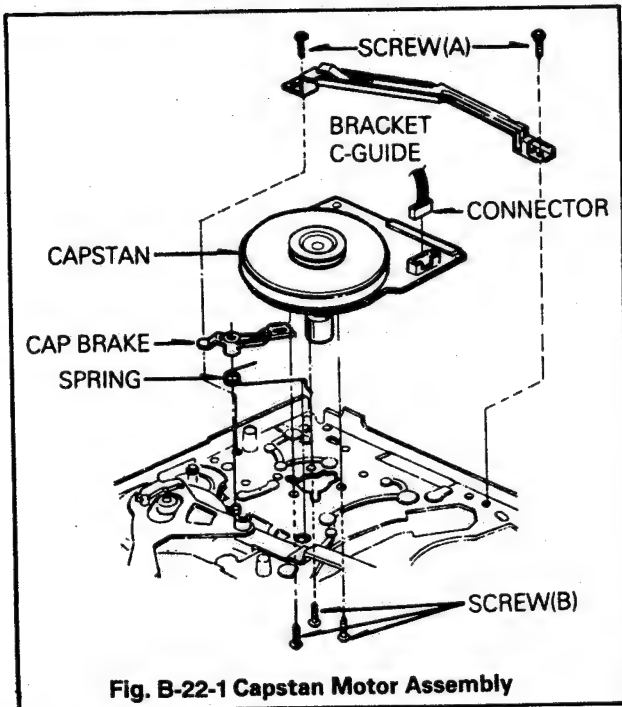
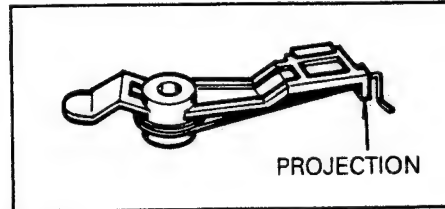


Fig. B-22-1 Capstan Motor Assembly

A: BEFORE REASSEMBLING OR AFTER DISASSEMBLING



B: AFTER REASSEMBLING OR BEFORE DISASSEMBLING

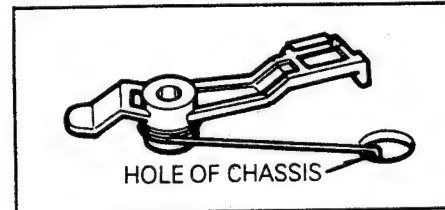


Fig. B-22-2 CAP Brake Assembly

## 23. Function Plate (Fig. B-23)

- 1) Remove two screws(B) in Eject Mode.
- 2) Remove the Function Plate Spring.
- 3) Push the Function Plate in the direction of arrow(A) and then lift it up.

### \* NOTE

- 1) When reassembling, the groove of Lower part of Function Plate should be aligned with the shaft of Tension Lever Assembly (Fig. B-29).

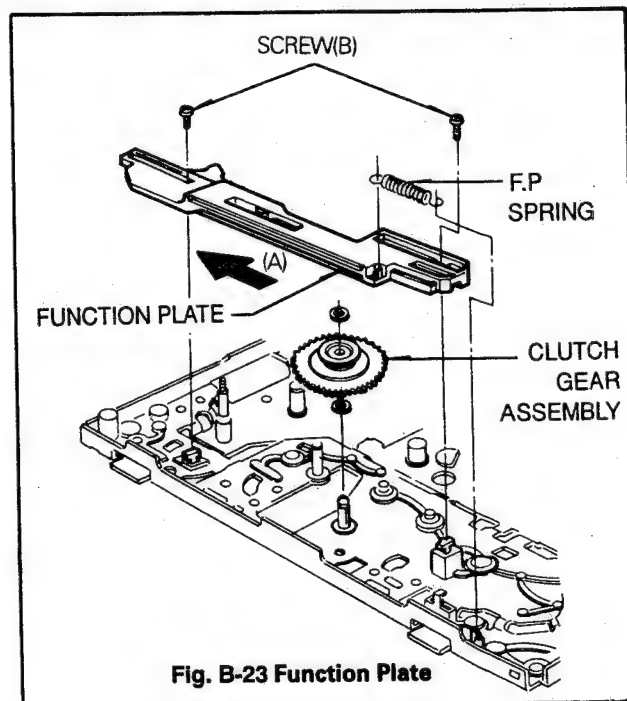


Fig. B-23 Function Plate

## 24. Ratchet Lever Assembly(Fig. B-24)

- 1) Remove the Function Plate.
- 2) Remove the Junction P.C.B Assembly.
- 3) Remove the Washer(A) and then remove the Ratchet Lever Assembly.
- 4) Remove the Ratchet Spring.
- 5) Remove the Ratchet Lever from the Ratchet 17 by lifting it up when the hook of it is aligned with the hole of Ratchet 17 while rotating it counterclockwise direction.
- 6) Remove the Washer(B), and turn over the Ratchet 17 and then remove the F-Lever Pin, Spring F-Lever.

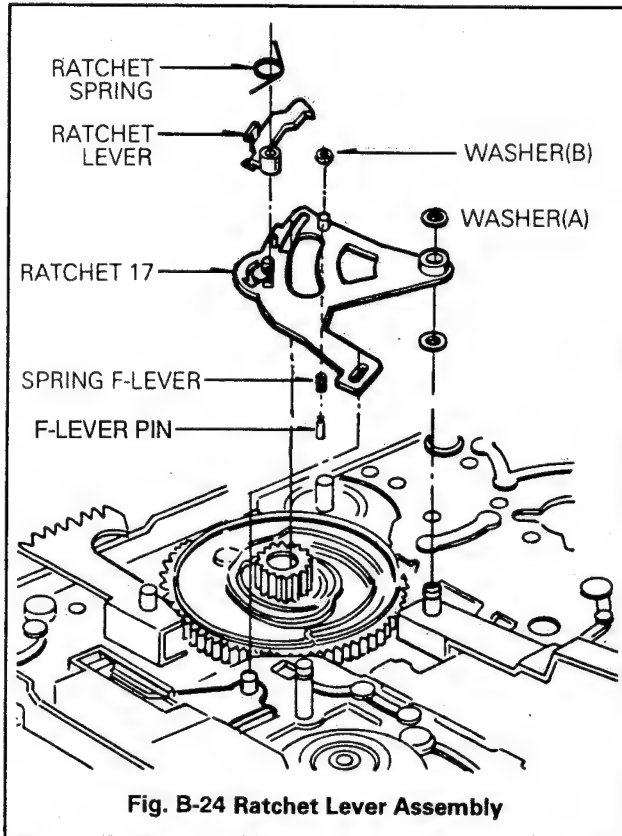


Fig. B-24 Ratchet Lever Assembly

## 25. Cam Gear/Rack Gear T/Rack Gear FL(Fig. B-25-2)

- 1) Remove the washer(A) and remove the Ratchet Lever Assembly.(Fig. B-25-1).
- 2) Remove the washer(B), and then remove the Cam Gear (Fig. B-25-2).
- 3) Remove the Rack Gear F.L.(Fig B-25-3).
- 4) Remove the Washer(D).(Fig. B-25-3).
- 5) Remove the Rack Gear T.(Fig. B-25-3).

### \* NOTE

- 1) When reassembling
  - ① Align the Projection of Rack Gear T with the hole of Loading Gear.
  - ② Drive the Rack Gear F.L in the direction of arrow(D).
  - ③ Hole of Cam should be aligned with the hole of chassis, and the groove(■) of Cam Gear should be aligned with the hole of PC Gear (Fig. B-26).

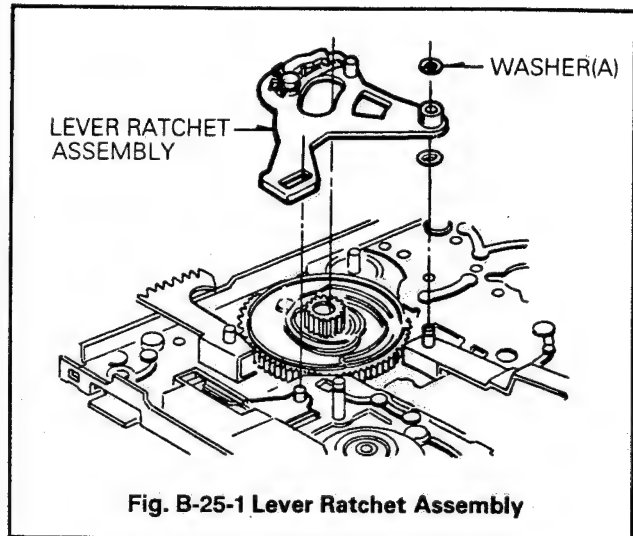


Fig. B-25-1 Lever Ratchet Assembly

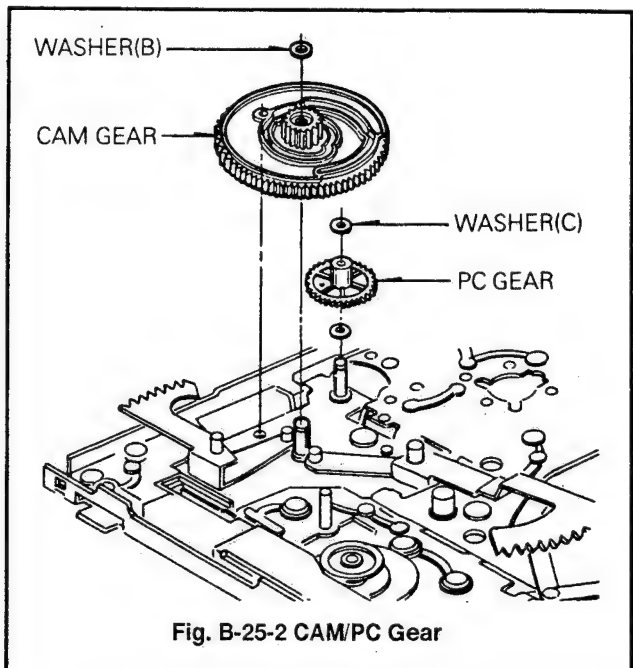


Fig. B-25-2 CAM/PC Gear

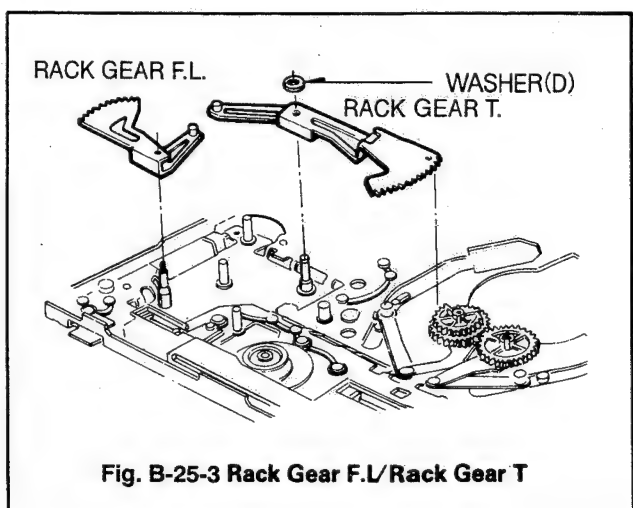


Fig. B-25-3 Rack Gear F.L/Rack Gear T

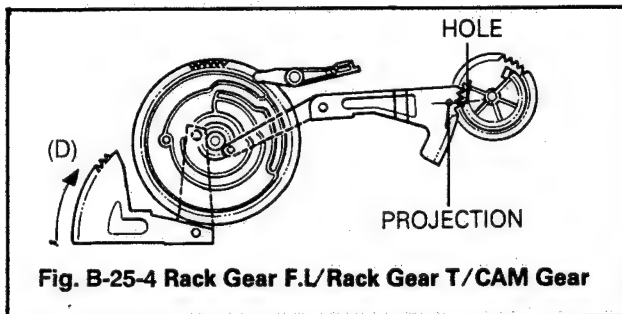


Fig. B-25-4 Rack Gear F.L./Rack Gear T/CAM Gear

## 26. PC Gear(Fig. B-26)

- 1) Remove the washer(C).
- 2) Remove the P.C Gear by lifting it up.

### \* NOTE

- 1) When reassembling
  - ① The Groove of PC Gear should be aligned with the groove(V) of Cam Gear, and another hole of it should be aligned with the hole of chassis (Fig. B-26).

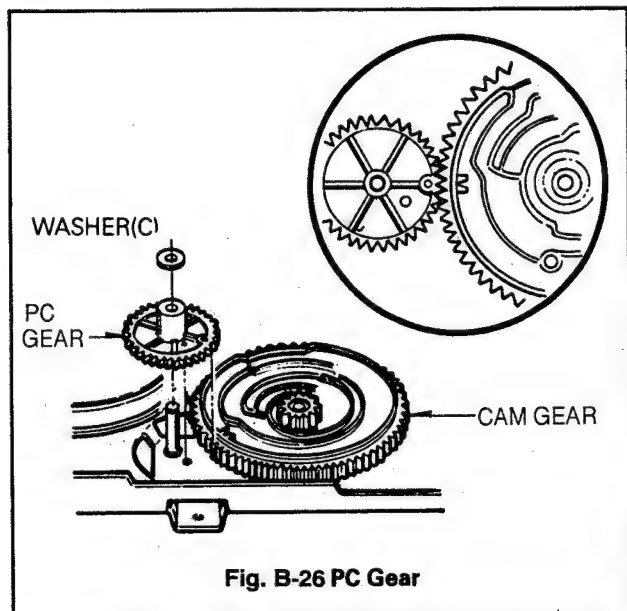


Fig. B-26 PC Gear

## 27. P2 and P3 Slant Assembly (Fig. B-27)

- 1) After finishing the disassembly of Drum Assembly, remove the P2 and P3 Slant Assembly by turning the Loading Gear(R) in the clockwise direction.(Loading direction)
- 2) Loosen the set screws.
- 3) Remove the Roller Guide from the Slant Base.

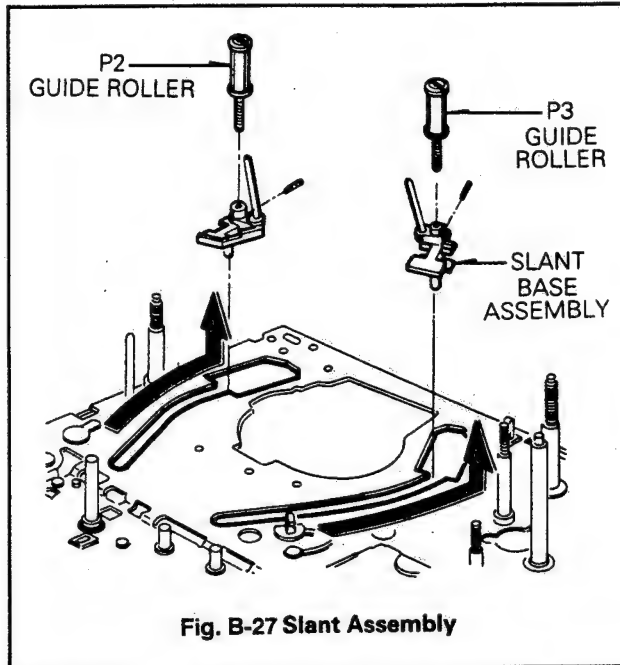


Fig. B-27 Slant Assembly

### \* NOTE

- 1) When disassembling and reassembling
  - ① Use a Hexagonal wrench to remove set screw.
  - ② Take notice that the P2 and P3 Slant Assembly should not be changed from their original place.

## 28. Loading Gear Assembly(L),(R) (Fig. B-28)

- 1) Remove the Cam Gear, Rack-T.
- 2) Remove the P2 and P3 Slant Assembly by turning the Loading Gear(L),(R) in the Loading direction
- 3) Lift up the Loading Gear Assembly(L),(R) from the Deck Mechanism Assembly.
- 4) Remove the Spring Load(L),(R).
- 5) Separate the Loading Gear(L), (R) from Arm Load(L), (R).

### \* NOTE

- 1) When reassembling
  - ① Make sure that the Loading Gear(L) and (R) should not be changed from their original place.
  - ② Align the groove of Loading Gear(L),(O) with the groove of Gear(R),(O).



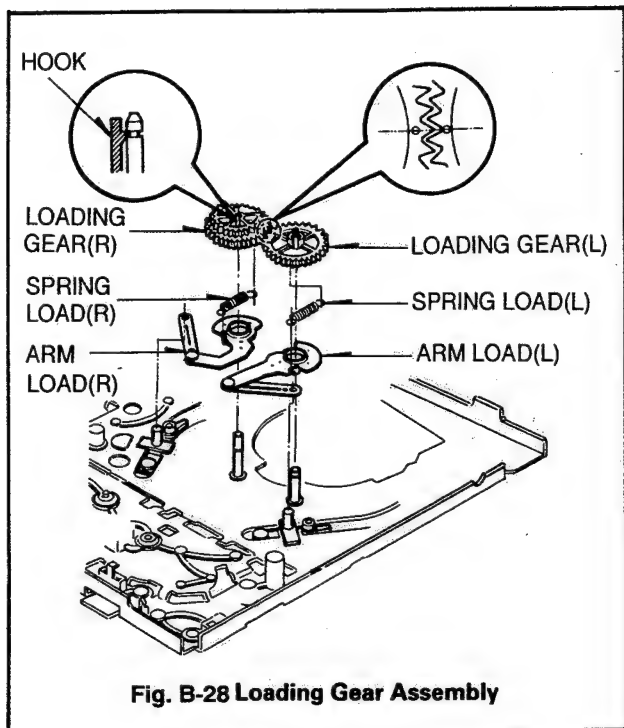


Fig. B-28 Loading Gear Assembly

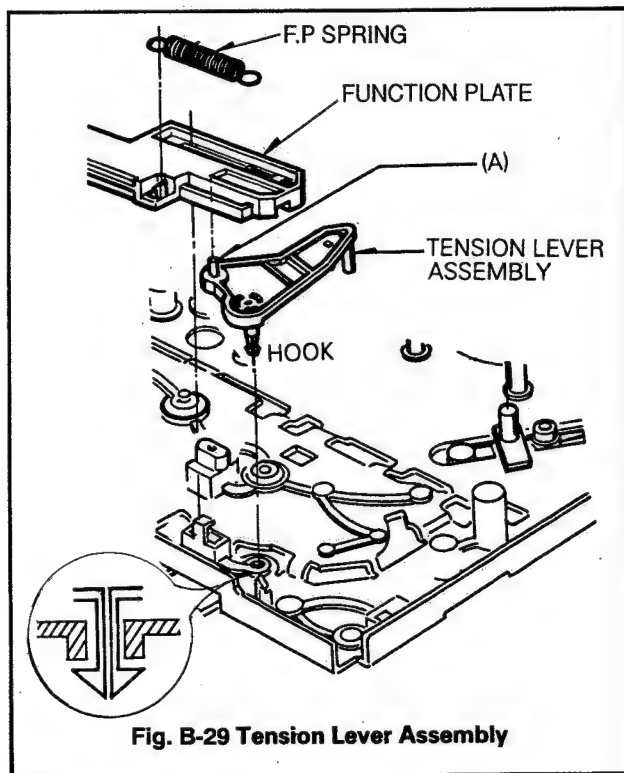


Fig. B-29 Tension Lever Assembly

## 29. Tension Lever Assembly(Fig. B-29)

- 1) Remove the Function Plate.
- 2) Remove the Tension Lever Assembly by pushing hooks inward.

### \* NOTE

- 1) When reassembling
  - ① Set the part(A) of Tension Lever Assembly in the groove of Lower part of Function Plate.

## 30. Clutch Gear Assembly(Fig. B-30)

- 1) Remove the Pulley Gear.
- 2) Remove the Plate Function.
- 3) Remove the washer(A), and then remove the Clutch Gear Assembly.

### \* NOTE

- 1) When reassembling
  - ① Do not disassemble the Clutch Gear Assembly any further, because Torque adjustment is not adjustable.

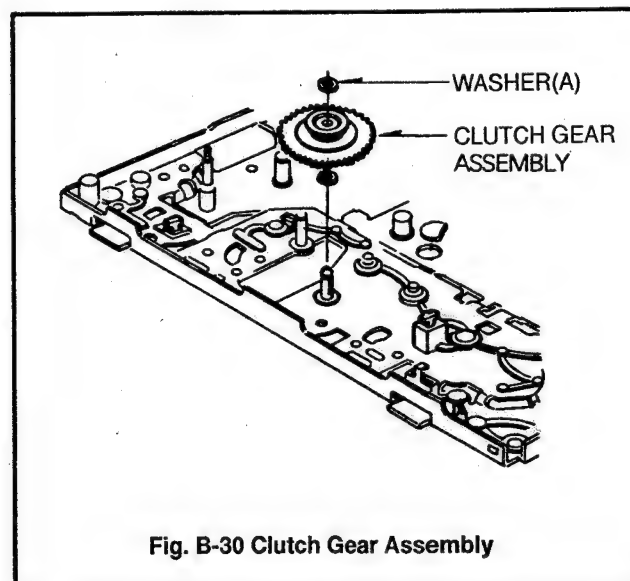
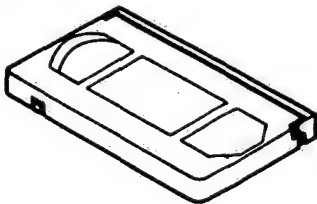
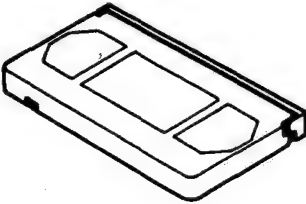



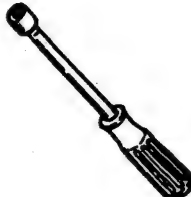


Fig. B-30 Clutch Gear Assembly

## MECHANISM ADJUSTMENTS

### • Tools and Fixtures for Deck

<p>1. Back tension meter Parts No : D00-D006</p> 	<p>2. Alignment tape Parts No NTSC: DTN-0001 PAL : DTN-0002</p> 	<p>3. Torque gauge Parts No : D00-D002</p> 
<p>4. Torque gauge adaptor Parts No : D09-R001</p> 	<p>5. Post height adjusting driver Parts No : DTL-0005</p> 	<p>6. M3 Nut driver Parts No : DTL-0006</p> 

## 1. Mechanism State Switch (Mode Switch) Check

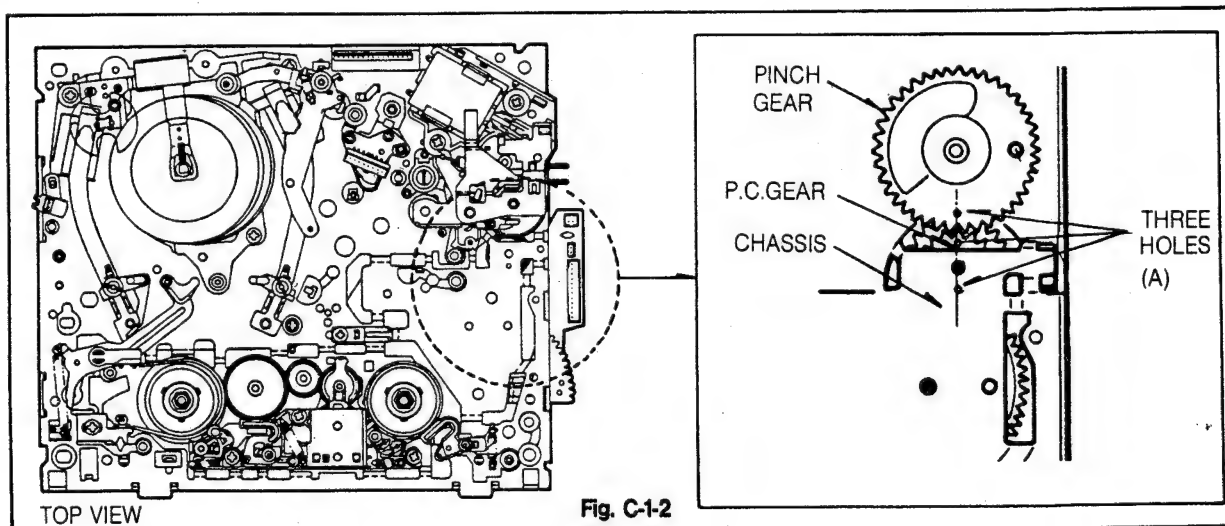
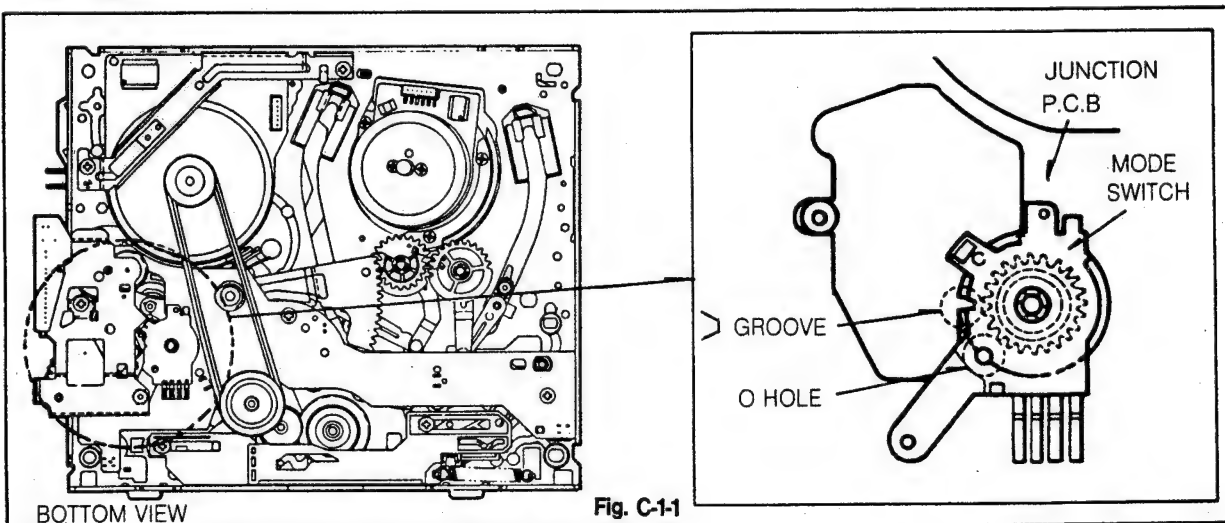
**Purpose:** To detect accurately the mechanism state and prevent the mechanism from malfunction.

Test Equipment/Fixture	VCR State	Check Point
● Blank tape	● Eject Mode (with cassette ejected)	● Mechanism state switch (Mode Switch and Cam)

### Check Procedure

- 1) Turn the VCR on and eject the tape by pressing eject button.
- 2) Remove the Cabinet Top, the Main P.C.Board and the CST Housing. Then push the CST IN/OUT switch (Loca. #137) and eject button at the same time.
- 3) Turn the worm (Loca. #082) of Loading Motor Assembly (Loca. #A10) to the left side (counter-clockwise) to align the three holes (A) of the Pinch Gear, the P.C.Gear and the Chassis.
- 4) Remove the Bottom Cover and then check that the groove (V) and the hole (O) of Mode S/W are aligned each other. If the above alignment is not obtained, adjust as follows.
  - (1) Remove the Bracket Assembly Bottom and the Capstan Belt in the state of power off.
  - (2) Remove the P.C.B Assembly, align the groove (V) and the hole (O) of Mode S/W each other and then reassemble the P.C.B Assembly.
  - (3) Turn the power on and perform the various operations to check that the loading and the unloading are correct.

### Check Diagram



## **2. Preparation for Adjustment(To set VCR to the loading state without inserting a cassette)**

- 1) Unplug the power cord from the AC outlet.
- 2) Remove the Cabinet Top and Front Loading mechanism.
- 3) Plug the power cord into the AC outlet.
- 4) Turn the VCR on and push the tact switch in the PCB Assembly.

The VCR can accept input of each mode in this case. However the rewind and review operation cannot be performed for more than a few seconds because the take-up reel table is in the stop state and reel pulses cannot be detected.

### **(NOTE)**

Always return the VCR to the Front Loading Mechanism Assembling State in the following order after the above operations have been performed.

- 1) Press the Eject button after turning the power on.
- 2) Wait for about 10 seconds until searching out the assembly position.
- 3) Assemble the Front Loading Mechanism and connect the Front Loading Mechanism Connector.
- 4) Refer to the "Front Loading Mechanism Disassembly" which is described previously.



### 3. Tension Post Position and Tension Adjustment

**Purpose:** To make the tension of tape constant so that the contact between the video heads and tape is stabilized.

Test Equipment/Fixture	VCR State	Adjustment Point
● Tension Meter (Tension adjustment)	● Play without cassette and with a Tension Meter	● Holder Band(B)

#### Adjustment Procedures

##### ⟨Position Adjustment⟩

- 1) Perform loading without inserting a tape and loosen the screw that attaches the Holder Band(B) to the Deck Mechanism Assembly.
- 2) Insert the (-)type driver between the Holder Band(B) and the "V" groove of the chassis.
- 3) Move the Holder Band(B) right and left and align the center of tension post(Guide T-Post) with the center of P1(Shaft P1).(tolerance:Less than  $\pm 0.3\text{mm}$ )
- 4) Tighten the screw that attaches the Holder Band(B) to Deck Mechanism Assembly.

- (2) below the standard:loosen the screw, move the Holder Band(B) to the left a little and then tighten the screw and make sure that this adjustment is correct.

#### **\*\*CAUTION\*\***

The range of movement of Holder Band(B) should be within  $\pm 1.5\text{mm}$  while being adjusted.  
If the range is over, you should recheck the Reel Brake, Tension Arm and Spring.

##### ⟨Tension Adjustment⟩

- 1) Play the Tension Meter and read the Tension Meter:  
 $38\text{g}\cdot\text{cm} \pm 4\text{g}\cdot\text{cm}$ (reference value).
- 2) If the result is abnormal.
  - (1) over the standard:loosen the screw, move the Holder Band(B) to the right a little and then tighten the screw and make sure that this adjustment is correct.

#### Adjustment Diagram

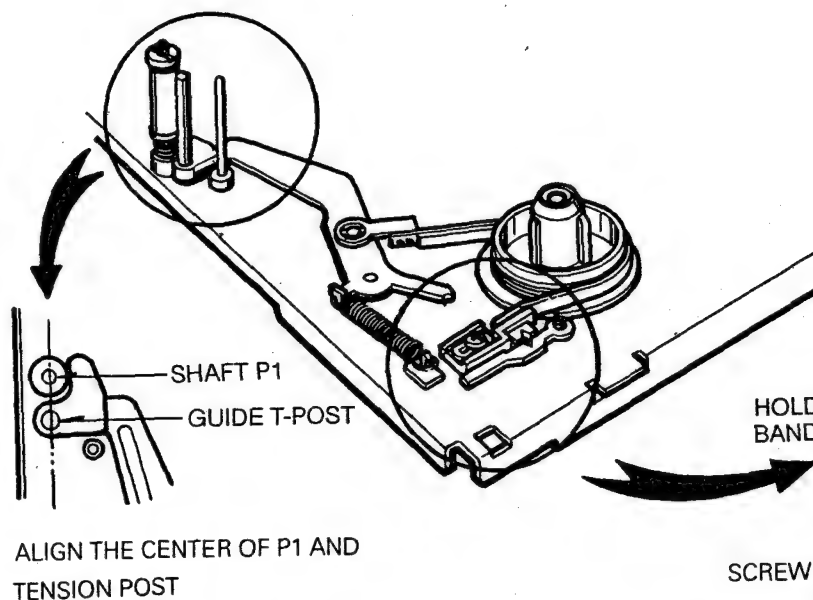


Fig. C-3-1

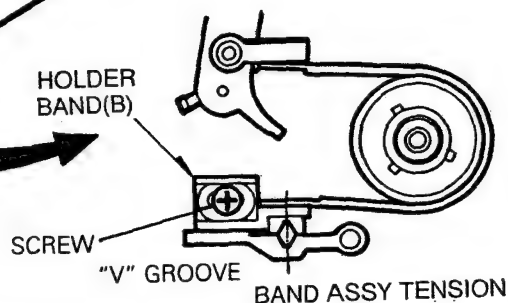


Fig. C-3-2

## 4. Checking Torque

**Purpose:** It is necessary to check the tension, torque and compression force at the tape take-up section and moving section to make the tape run smoothly and satisfy the basic performance of the VCR. Check these if the tape does not run smoothly or the tape speed is abnormal.

Test Equipment/Fixture		VCR state	
<ul style="list-style-type: none"> <li>● Torque Gauge</li> <li>● Torque Gauge Adaptor</li> <li>● Cassette Torque Meter SRK-VHT-063 : Play, Cue SRK-VHT-303 : Review</li> </ul>		<ul style="list-style-type: none"> <li>● Set the VCR to each operation mode without inserting a cassette. (See '2 Preparation for Adjustment')</li> </ul>	
Item	VCR Operation mode	Measurement Reel	Measurement Values
Main brake torque.	Eject	Supply and take-up reels	600g.cm or more
Slack removal torque	Unloading(power off)	Supply reel	120~220g.cm
Fast forward torque	Fast forward	Take-up reel	600g.cm or more
Rewind torque	Rewind	Supply reel	600g.cm or more
Play take-up torque	Play	Take-Up reel	90~150g.cm
Review Torque	Review	Supply Reel	120~180 g.cm
CUE Torque	Cue	Take-Up Reel	110~170 g.cm

### Checking Method

The values are measured by using a torque gauge and torque gauge adaptor with the torque gauge fixed.

**Note:** This value is measured when the VCR is shifted in the unloading direction from the fast forward or rewind mode and quick braking is applied to both Reel Tables.

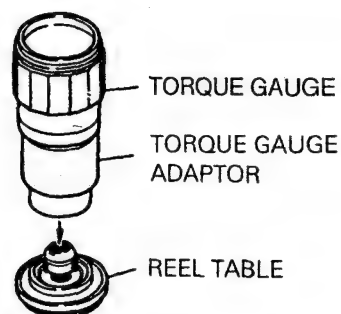
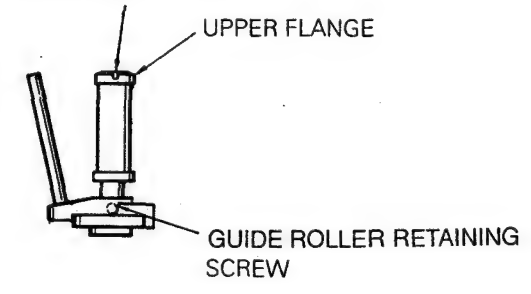


Fig. C-4

## 5. Guide Roller Height Adjustment

**Purpose:** To regulate the height of tape so that the bottom of tape runs along the tape guide line on the lower drum.

### A. Preliminary Adjustment

Test Equipment/ Fixture	VCR State	Adjustment Point
<ul style="list-style-type: none"> <li>● Hexagonal Wrench or Bended Drive (+) Type</li> <li>● Post Height Adjusting Driver</li> </ul>	<ul style="list-style-type: none"> <li>● Play an alignment tape</li> </ul>	<ul style="list-style-type: none"> <li>● Guide Roller Height Adjustment Screws on the Supply and Take-Up Guide Rollers.</li> </ul>
<b>Adjustment Procedure</b> <ol style="list-style-type: none"> <li>1) Perform the precise adjustment.</li> <li>2) When the Guide Roller is damaged, release the Guide Roller retaining screw and then replace the Guide Roller.</li> </ol>		<b>Adjustment Diagram</b>  <p>The diagram shows a side view of a guide roller assembly. A vertical rod is labeled 'GUIDE ROLLER HEIGHT ADJUSTMENT SCREW'. A horizontal flange at the top of the rod is labeled 'UPPER FLANGE'. A screw that passes through the flange and the roller body is labeled 'GUIDE ROLLER RETAINING SCREW'.</p> <p><b>Fig. C-5-1</b></p>

## B. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Points	VCR State	Adjustment Point
<ul style="list-style-type: none"> <li>● Oscilloscope</li> <li>● Post Height Adjusting Driver</li> <li>● Alignment Tape(30HMP-2)</li> <li>● Hexagonal wrench</li> </ul>	<ul style="list-style-type: none"> <li>● CH-1: PB RF Envelope</li> <li>● CH-2 (NTSC : SW30Hz PAL : SW25Hz)</li> <li>● Head Switching Output Point</li> <li>● RF Envelope Output Point</li> </ul>	<ul style="list-style-type: none"> <li>● Play an alignment tape</li> </ul>	<ul style="list-style-type: none"> <li>● Guide Roller Height Adjustment Screws.</li> </ul>

### Adjustment Procedure

- 1) Play an alignment tape after connecting the probe of the oscilloscope to RF Envelope Output Test Point and Head Switching Output Test Point.
- 2) Tracking control(in PB mode):Center position(When this adjustment is performed after the drum assembly has been replaced, set the tracking control so that the RF output is maximum.)
- 3) Height adjustment screw:Flatten the RF waveform.
- 4) Turn(Move) the tracking control(playback) clockwise and counterclockwise.(to the right and left)

- 5) Check that any drop of RF output is uniform at the start and end of the waveform.

### **\*\*CAUTION\*\***

If the adjustment is excessive or insufficient the tape is jammed or folded.

### Waveform Diagrams

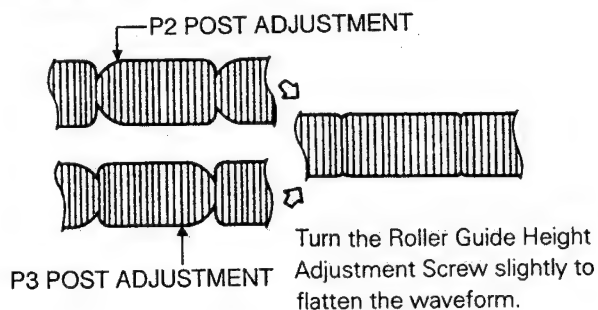
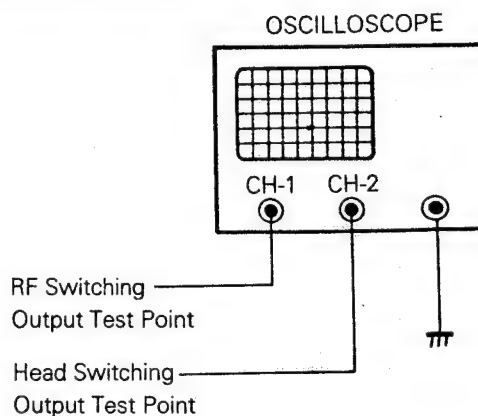


Fig. C-5-2

### Connection Diagram



Tracking control at center Turn(Move) the tracking control to both directions.

Fig. C-5-3



## 6. Audio/Control(A/C) Head Adjustment

**Purpose:** To keep the contact between the tape and head so that the specified track is recorded and played back.

**A. Preliminary Adjustment** (Perform the preliminary adjustment, when there is no Audio Output signal with alignment tape.)

Test Equipment/Fixture	VCR State	Adjustment Points
● M3 Nut Driver		● Special screw ● Cone Point Screw for tilt ● Azimuth Adjustment Screw
● Blank tape	● Run the blank tape	● A/C Head Adjuster

### Adjustment procedure/Adjustment Diagram

- 1) Tighten the special screw so that the spring section protrudes 6.4mm(approx.) over the top of Head Base (1).

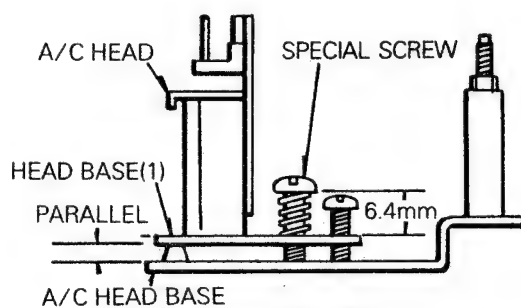


Fig. C-6-1

- 2) Turn the Azimuth Adjustment Screw and Cone Point Screw so that the Head Base(1) and A/C Head Base are parallel.

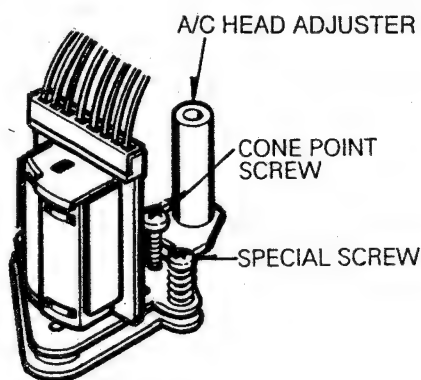


Fig. C-6-2

- 3) Load a blank tape and set the VCR to the play mode.

- 4) Confirm that the tape runs fittingly to the lower limit of the P4 post. Also confirm that the tape runs smoothly.
- 5) If adjustment is required, turn Cone Point Screw clockwise until curling is apparent at the lower edge of P4. Then turn Cone Point Screw counterclockwise until the curling smooths out.

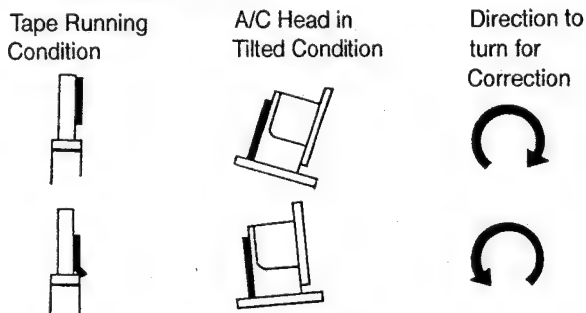


Fig. C-6-3

- 6) Check that there is no conspicuous curling and folding around the A/C head. If there is conspicuous curling or folding, readjust the Cone Point Screw, Azimuth Adjustment Screw and A/C Head Adjuster. When the bottom edge of tape is 0.20~0.25mm from the bottom edge of the control head's core, the height of A/C head is ideal.

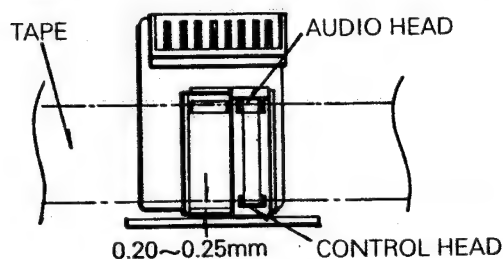
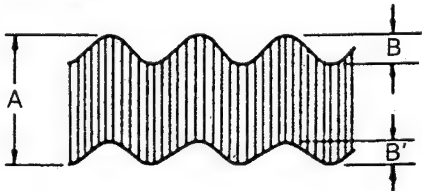


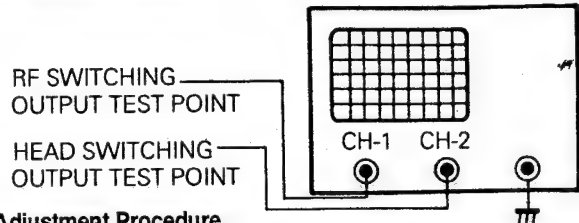
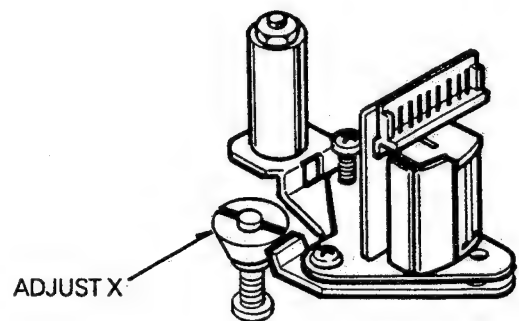
Fig. C-6-4

- 7) If necessary repeat steps 1 through 4 until a precise adjustment is achieved.

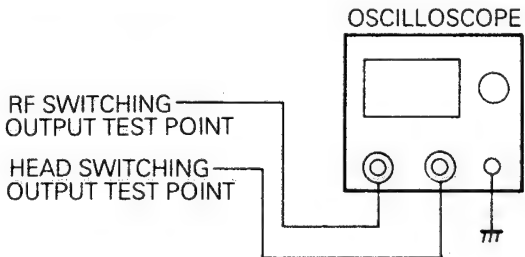
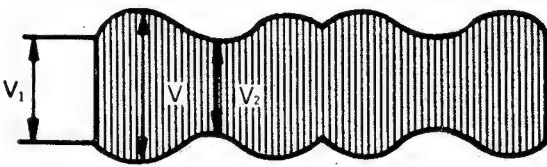
## B. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Point	VCR State	Adjustment Points
<ul style="list-style-type: none"> <li>● Oscilloscope</li> <li>● Alignment tapes</li> <li>● M3 Nut Driver</li> </ul>	<ul style="list-style-type: none"> <li>● Audio output jack</li> </ul>	<ul style="list-style-type: none"> <li>● Play an alignment tape 1KHz, 7KHz sections</li> </ul>	<ul style="list-style-type: none"> <li>● Azimuth Adjustment Screw</li> <li>● A/C Head adjuster</li> <li>● Cone point screw</li> </ul>
<b>Adjustment Procedure</b> <ol style="list-style-type: none"> <li>1) Connect the probe of oscilloscope to audio output jack.</li> <li>2) Adjust the Azimuth Adjustment Screw, A/C Head adjuster and cone point screw slightly and alternately so that an Audio 1KHz output is maximum and flat. (minimum fluctuation).</li> <li>3) Adjust the Azimuth Adjustment Screw slightly and alternately so that the Audio 7KHz output is maximum.</li> </ol>		<b>Waveform Diagram</b>  <p>A:Maximum    BB':Minimum</p> <p>Fig. C-6-5</p>	

## 7. X-Value Adjustment

<b>Purpose:</b> To obtain compatibility with other VCRs.			
Test Equipment/ Jigs	Test Equipment Connection Points	VCR State	Adjustment Points
<ul style="list-style-type: none"><li>● Oscilloscope</li><li>● Alignment tapes</li><li>● Post Height Adjusting Driver</li></ul>	<ul style="list-style-type: none"><li>● CH-1:PB RF Envelope</li><li>● CH-2:SW 30Hz</li><li>● Head Switching Output Test Point</li><li>● RF Envelope Output Test Point</li></ul>	<ul style="list-style-type: none"><li>● Play an alignment tape</li></ul>	<ul style="list-style-type: none"><li>● Adjust X</li></ul>
<b>Connection Diagram</b> 		<b>Adjustment Diagram</b> 	
<b>Adjustment Procedure</b> <ol style="list-style-type: none"><li>1) Insert a cassette tape, and then "AUTO TRACKING" will be displayed on the Digitron, then push the Tracking ⊕ or ⊖ Keys one time as soon as possible to make the VCR release the Auto Tracking.</li><li>2) Turn the Adjust X to the maximum RF Envelope level when the VCR is free from the Auto tracking.</li><li>3) If RF envelope output is maximized from the center click position in the right direction (clockwise), set the tracking control to the center and turn the X Adjust counterclockwise.</li><li>4) If in the left direction (counterclockwise), turn it clockwise by the same method.</li><li>5) In case of the 30 μm, head will trace over a 60 μm width track, readjust it so that RF Envelope output begins falling at the same angle when tracking control is turned either left or right.</li></ol>			

## 8. Adjustment after Replacing Drum Assembly(Video Heads)

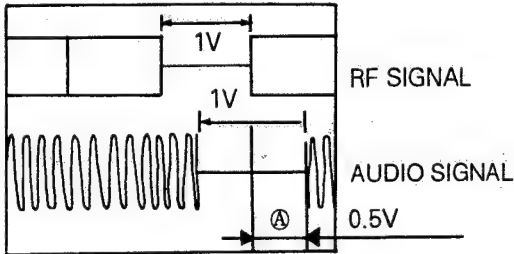
Purpose: To suppress drift in the height relative to the Guide Roller and drift of the X Value after replacing the drum.			
Test Equipment/Fixture	Test Equipment Connection Points	VCR State	Adjustment Points
<ul style="list-style-type: none"><li>● Oscilloscope</li><li>● Post Height Adjusting Driver</li><li>● Alignment tape</li><li>● Blank tape</li><li>● M3 Nut Driver</li></ul>	<p>Checking the flatness</p> <ul style="list-style-type: none"><li>● CH-1: PB RF Envelope</li><li>● CH-2 (NTSC : SW30Hz PAL : SW25Hz)</li><li>● Head Switching Output Point</li><li>● RF Envelope Output Point</li></ul>	<ul style="list-style-type: none"><li>● Run the blank tape</li><li>● Play an alignment tape</li></ul>	<ul style="list-style-type: none"><li>● Guide Rollers Precise Adjustment</li><li>● Switching point</li><li>● Tracking point</li><li>● X-Value</li></ul>
<p>Connection Diagram</p> 		<p>Waveform Diagram</p>  <p><math>V_1/V \text{ MAX} \geq 0.7</math> <math>V_2/V \text{ MAX} \geq 0.8</math> RF ENVELOPE OUTPUT</p>	
<p>Checking/Adjustment Procedure</p> <ol style="list-style-type: none"><li>1) Run the blank tape, check and adjust whether the Roller Guide is curling or creasing tape around the Roller Guide.</li><li>2) Check the RF envelope output flatness and adjust the Roller Guide Height while playing an alignment tape.</li><li>3) Adjust the head switching point.</li><li>4) Check that RF envelope output is maximum when the tracking is at the initial position.</li><li>5) Adjust the Tracking Preset and X-Value Adjust with X Adjust.</li></ol>			

## 9. Check of Tape Travel after reassembling Deck Assembly

### 9-1. Check Audio and RF Locking Time during playback after CUE or REV.

<b>Test Equipment/Fixture</b>	<b>Specification</b>	<b>Test Equipment Connection Point</b>	<b>VCR State</b>
<ul style="list-style-type: none"> <li>● Oscilloscope</li> <li>● Alignment tape (with 6H 3kHz Color Bar Signal)</li> <li>● Stop Watch</li> </ul>	<ul style="list-style-type: none"> <li>● RF Locking Time : Less than 5 sec.</li> <li>● Audio Locking Time : Less than 10 sec.</li> </ul>	<ul style="list-style-type: none"> <li>● CH-1 : PB RF Envelope</li> <li>● CH-2 : Audio Output</li> <li>● RF Envelope Output Point</li> <li>● Audio Output Jack</li> </ul>	<ul style="list-style-type: none"> <li>● Play an alignment tape (with 6H 3kHz Color Bar Signal)</li> </ul>
<b>Checking Procedure</b> <ol style="list-style-type: none"> <li>1) Change the mode of CUE or REV to play.</li> <li>2) At this time, confirm that the Locking Time of Audio and RF Output Waveform fits to specification.</li> <li>3) If the results checked above are abnormal, repeat adjustments 4 through 8.</li> </ol> <p style="text-align: right;">※ 6H : LP</p>			

## 9-2. Check the coincidence of both Audio and Video Sync.(Lip Sync.)

Test Equipment/Fixture	Specification	Test Equipment Connection Point	VCR State
<ul style="list-style-type: none"> <li>● Oscilloscope</li> <li>● 2H 9V Tape(for X-Value Adjustment Coincidence) or alignment tape</li> </ul>	<ul style="list-style-type: none"> <li>● Less than <math>\pm 0.5V</math></li> </ul>	<ul style="list-style-type: none"> <li>● CH-1 : PB RF Envelope</li> <li>● CH-2 : Audio Output</li> <li>● RF Envelope Output Point</li> <li>● Audio Output Jack</li> </ul>	<ul style="list-style-type: none"> <li>● Play a 2H 9V tape or an alignment tape.</li> </ul>
<b>Checking Procedure</b> <ol style="list-style-type: none"> <li>1) Confirm that the period <math>\textcircled{A}</math> of Fig. C-9-1 is within <math>\pm 0.5V</math>.</li> <li>2) If the result is abnormal, repeat adjustment #7. (X-Value adjustment).</li> </ol> <div style="text-align: right;">  <p>Fig. C-9-1</p> </div> <p>※ 2H : SP, V : Vertical</p>			

## 9-3. Check the occurrence of tape curl and jam

Test Equipment/Fixture	Specification	VCR State
<ul style="list-style-type: none"> <li>● T-160 Tape</li> <li>● T-120 Tape</li> </ul>	<ul style="list-style-type: none"> <li>● Be sure there is no jam or curl at the beginning, the middle period or the end of the T-160 tape.</li> </ul>	<ul style="list-style-type: none"> <li>● Run the CUE, REV play mode at the beginning and the end of the tape.</li> </ul>
<b>Checking Procedure</b> <ol style="list-style-type: none"> <li>1) Confirm whether the state of each transportation post is normal.</li> <li>2) Make sure nothing is wrong with the operation of the Counter, when the lower part of tape is folded.</li> <li>3) Be sure there is nothing wrong in the Audio signal, when the upper part of tape is folded.</li> <li>4) If the result is abnormal, repeat adjustment #5 and #6.</li> </ol>		

## 9-4. Check the adjustment state of Take-Up Guide

Test Equipment/Fixture	Specification
<ul style="list-style-type: none"> <li>● T-120 Tape</li> <li>● Take-Up Guide Adjusting Driver</li> </ul>	<ul style="list-style-type: none"> <li>● Review : Travel the tape that align the top of the P4 Guide and the bottom of the Tape or be folded.</li> <li>● Play : Travel the tape that align the top of the P4 Guide and the bottom of the Tape.</li> </ul>

### Checking Procedure

- 1) Run the CUE or PLAY mode at the middle period or the end of the T-120 tape.
- 2) Run the REV mode at the play or cue part of tape.
- 3) At this time, confirm that the change of tape height at the P4 Guide fits to specification.
- 4) If the result is abnormal, refer to Table 9-1.
- 5) Play the beginning of T-120 tape(within 5 min.)
- 6) Confirm that the state of tape transportation fit to specification in P4 Guide.
- 7) Remove the Tension Arm Assembly by rotating in the clockwise direction and then confirm that the state of tape transportation fit to specification.
- 8) If the result is abnormal, refer to Table 9-1.

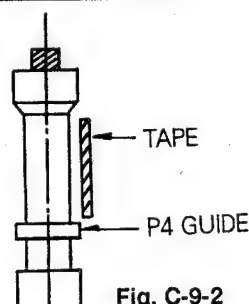


Fig. C-9-2

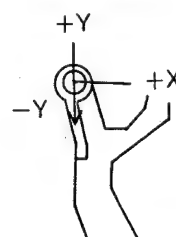


Fig. C-9-3

PLAY Mode	REV Mode	Adjustment Method
Tape Falling	Tape Lift	Bend the shaft of the direction +Y.
Tape Lift	Tape Falling	Bend the shaft of the direction -Y.

Table 9-1

## 10. Maintenance/Inspection Procedure

### (1) Required Maintenance

The recording density of a VCR is much higher than that of an audio tape recorder. VCR components must be very precise, at tolerances of 1/1000mm, to ensure compatibility with other VCRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure good picture, periodic inspection and maintenance, including replacement of worn out parts and lubrication, are necessary.

### (2) Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they vary greatly according to the way in which the customer uses the VCR, and the environment in which the VCR is used.

But, in general home use, a good picture will be maintained if the inspection and maintenance is made every 1,000hours. The table below shows the relation between time used and inspection period.

**Table 1**

When inspection is necessary Average hours used per day	About 1 year	About 18 months	About 3 years
One hour			
Two hours			
Three hours			

### (3) Check before starting repairs

The following faults can be remedied by cleaning and oiling. Check the needed lubrication and the conditions of cleanliness in the unit.

Check with the customer to find out how often the unit is used, and then determine that the unit is ready for inspection and maintenance. Check the following parts.

**Table 2**

Phenomenon	Inspection
Poor S/N, no color	Dirt on video head or worn video head
Tape does not run or tape is slack	Dirt on pressure roller, belt or flywheel belt
Vertical jitter, horizontal jitter	Dirt on video head or in tape transport system
Color beats	Dirt on full-erase head
Low volume or sound distorted	Dirt on audio/control head
Fast forward or rewind is not done or rotation is slow	Dirt on belt

### (4) Supplies Required for Inspection and Maintenance

- (1) Greases Kanto G-31(or equivalent)
- (2) Alcohol(Isopropyl Alcohol)
- (3) Cleaning Patches



## 5) Maintenance Procedure

### 5-1) Cleaning

#### (1) Cleaning video head

First use a cleaning tape. If dirt on head is too stubborn to remove by tape, use the cleaning patch. Coat the cleaning patch with alcohol(Isopropyl Alcohol) to the point indicated. Touch the cleaning patch to the head tip and gently turn the head(rotating cylinder) right and left.

(Do not move the cleaning patch vertically and make sure that only the buckskin on the cleaning patch comes into contact with the head. Otherwise, the head may be damaged.)

Thoroughly dry the head. Then run test tape. If alcohol(Isopropyl Alcohol) remains on the video head, the tape may be damaged when it comes into contact with the head surface.

- (2) Clean the tape transport system and drive system, etc, by wiping with a cleaning patch wetted with alcohol(Isopropyl Alcohol).

#### Note:

- ① It is the tape transport system which comes into contact with the running tape. The drive system consists of those parts which move the tape.
- ② Make sure that during cleaning you do not touch the tape transport system with the tip of a screw driver and no force is applied to the system that would cause deforming.

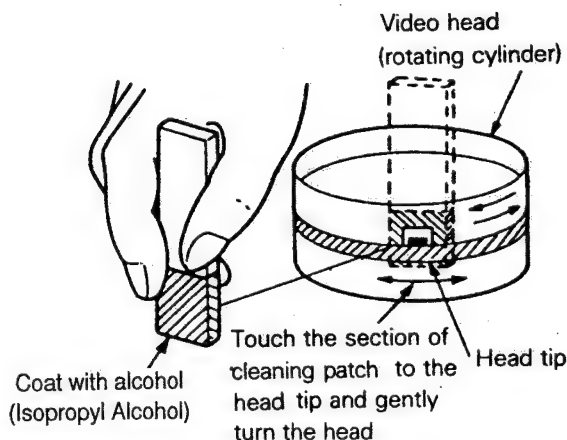


Fig. C-10-1

### 5-2) Greasing

#### (1) Greasing guidelines

Apply grease, with a cleaning patch. Do not use excess grease. It may come into contact with the tape transport or drive system. Wipe any excess and clean with cleaning patch wetted in alcohol(Isopropyl Alcohol).

#### (2) Periodic greasing

Grease specified locations every 5,000 hours.

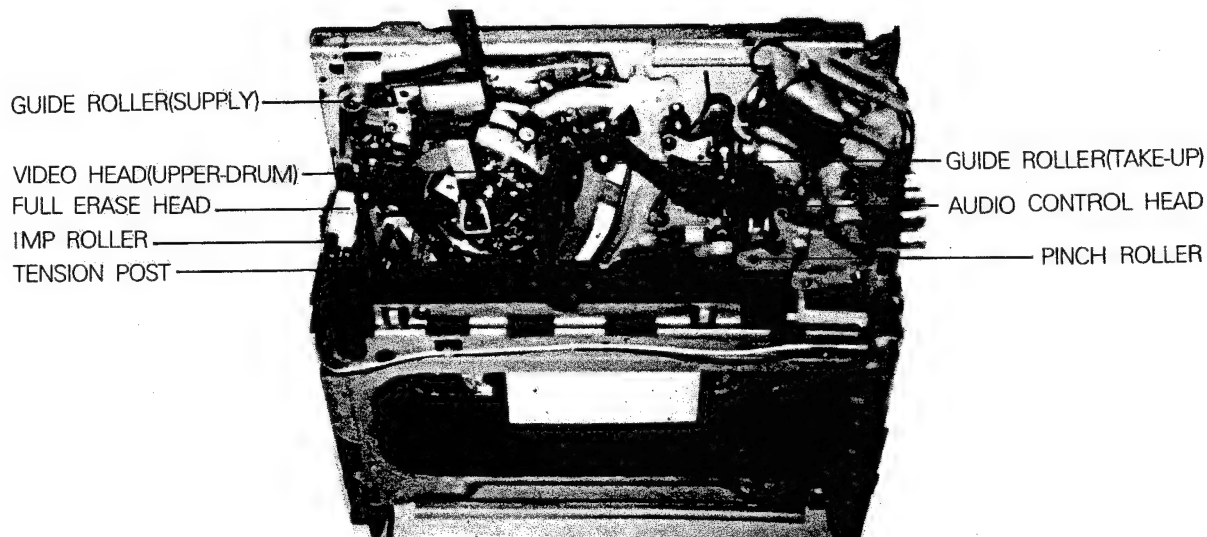


Fig. C-10-2 Tape Transport System

Phenomenon	Inspection	Replace ment	
Color beats	Dirt on full-erase head	○	→ ①
Poor S/N no color	Dirt on video head	○	→ ②
Vertical jitter	Dirt on video head	○	→ ③
	Dirt in tape transport system		
Low volume, Sound distorted	Dirt on audio/control head	○	→ ④
Tape does not run. Tape is slack	Dirt on pinch roller.	○	→ ⑤

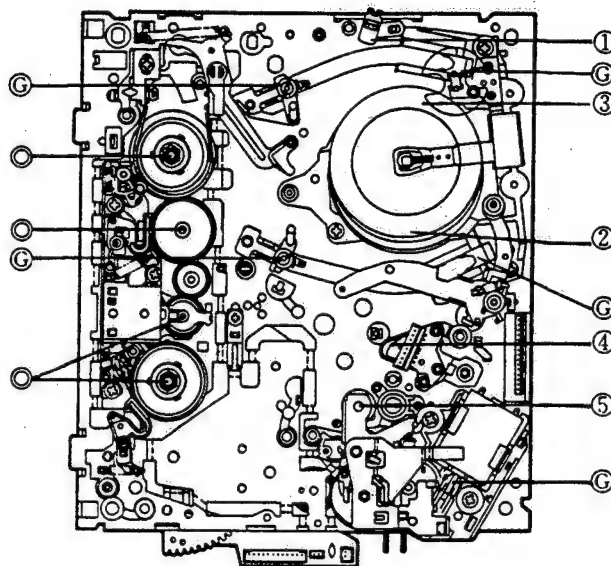


Fig. A-11 Top View of Mechanism

Phenomenon	Inspection Location	Replace ment	
Do not fast forward or rewind, or rotation is slow	Dirt on reel belt	○	→ ⑥
Tape does not run			
Slack tape			

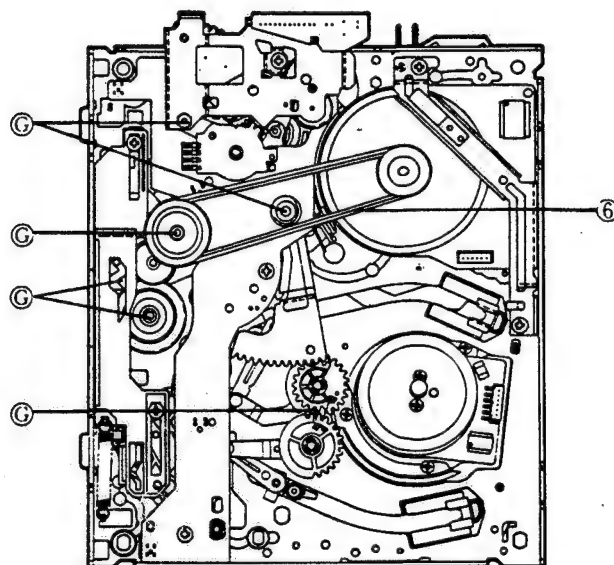


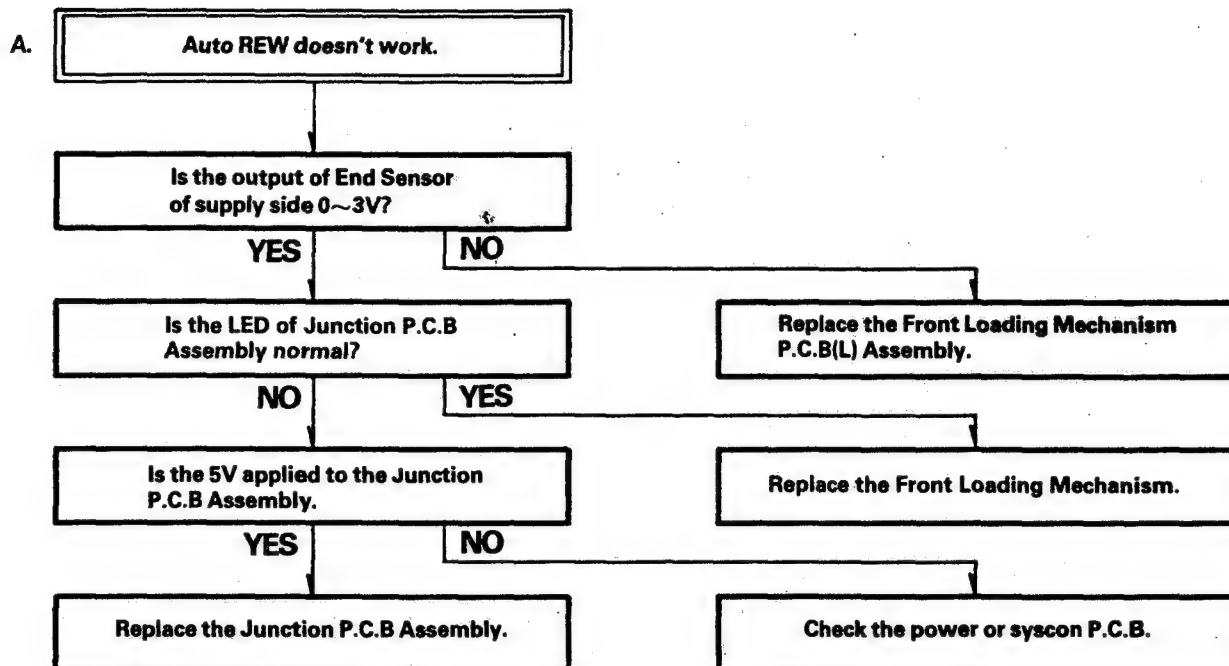
Fig. A-12 Bottom View of Mechanism

**Note:** If locations marked with ○ do not operate normally after cleaning, check for wear and replace.  
See the EXPLODED VIEWS at the end of this manual as well as the above illustrations for the sections to be lubricated and greased.

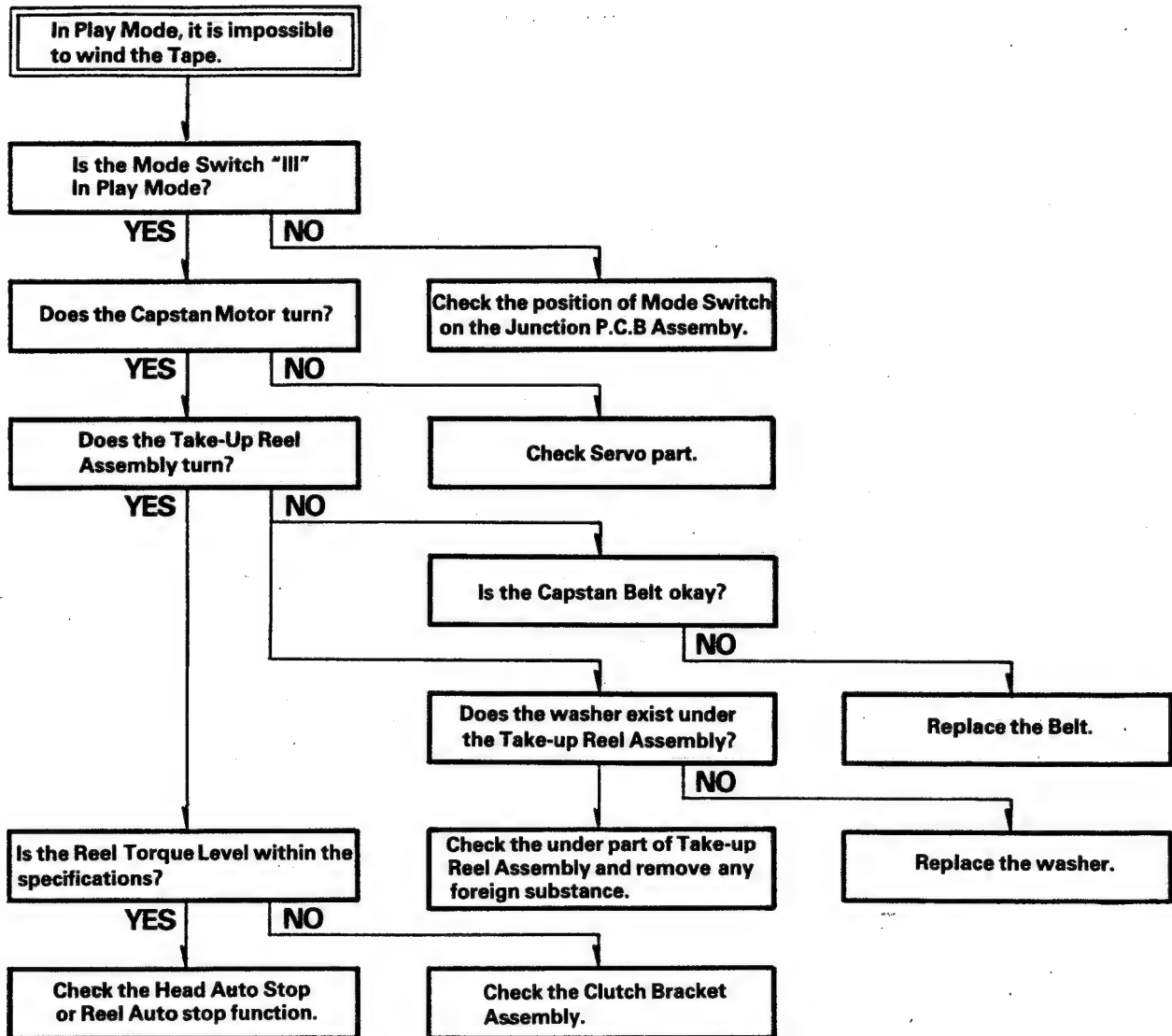
⊙: Grease  
○: Oil

# MECHANISM TROUBLESHOOTING GUIDE

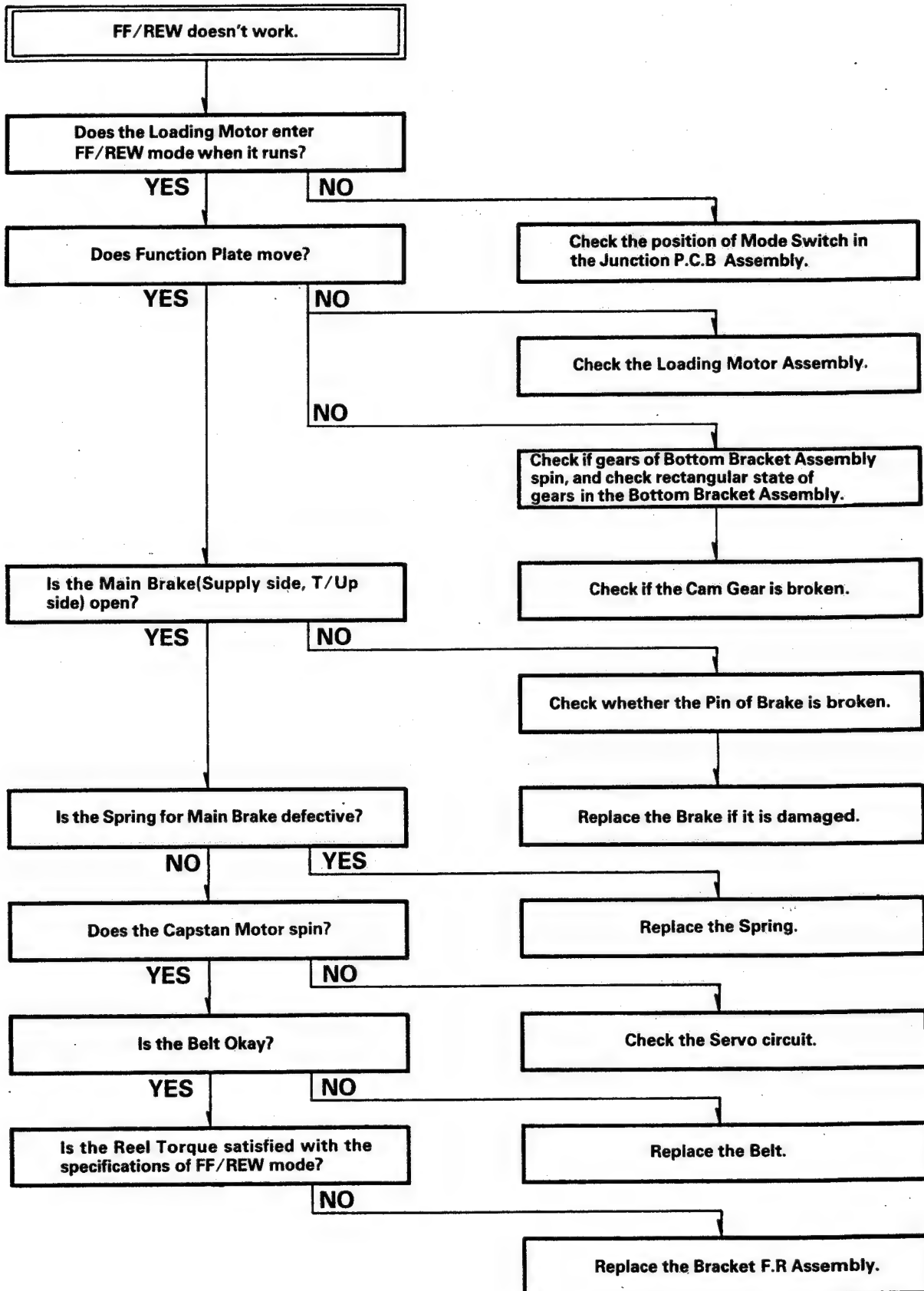
## 1. Deck Mechanism



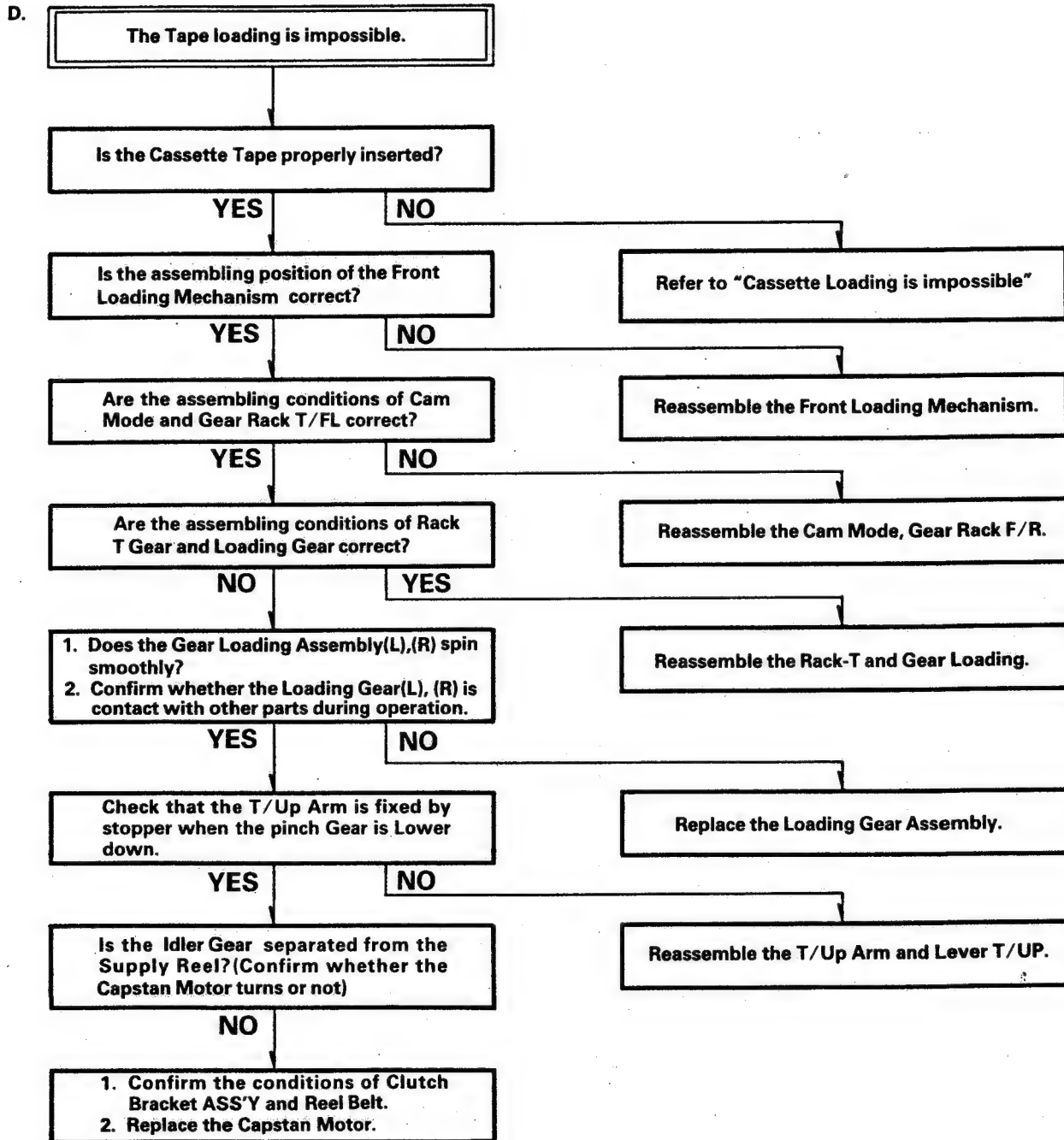
B.



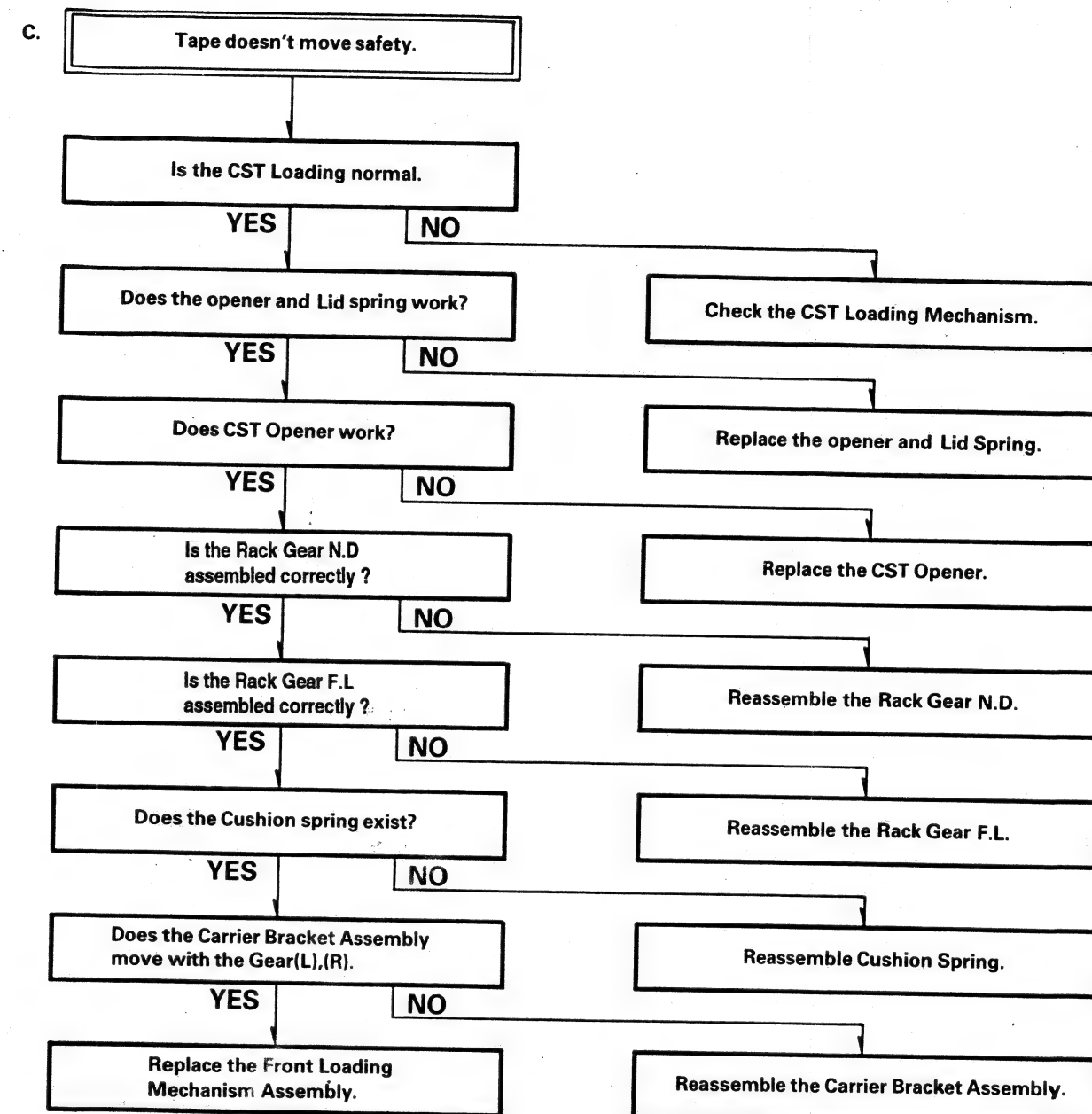
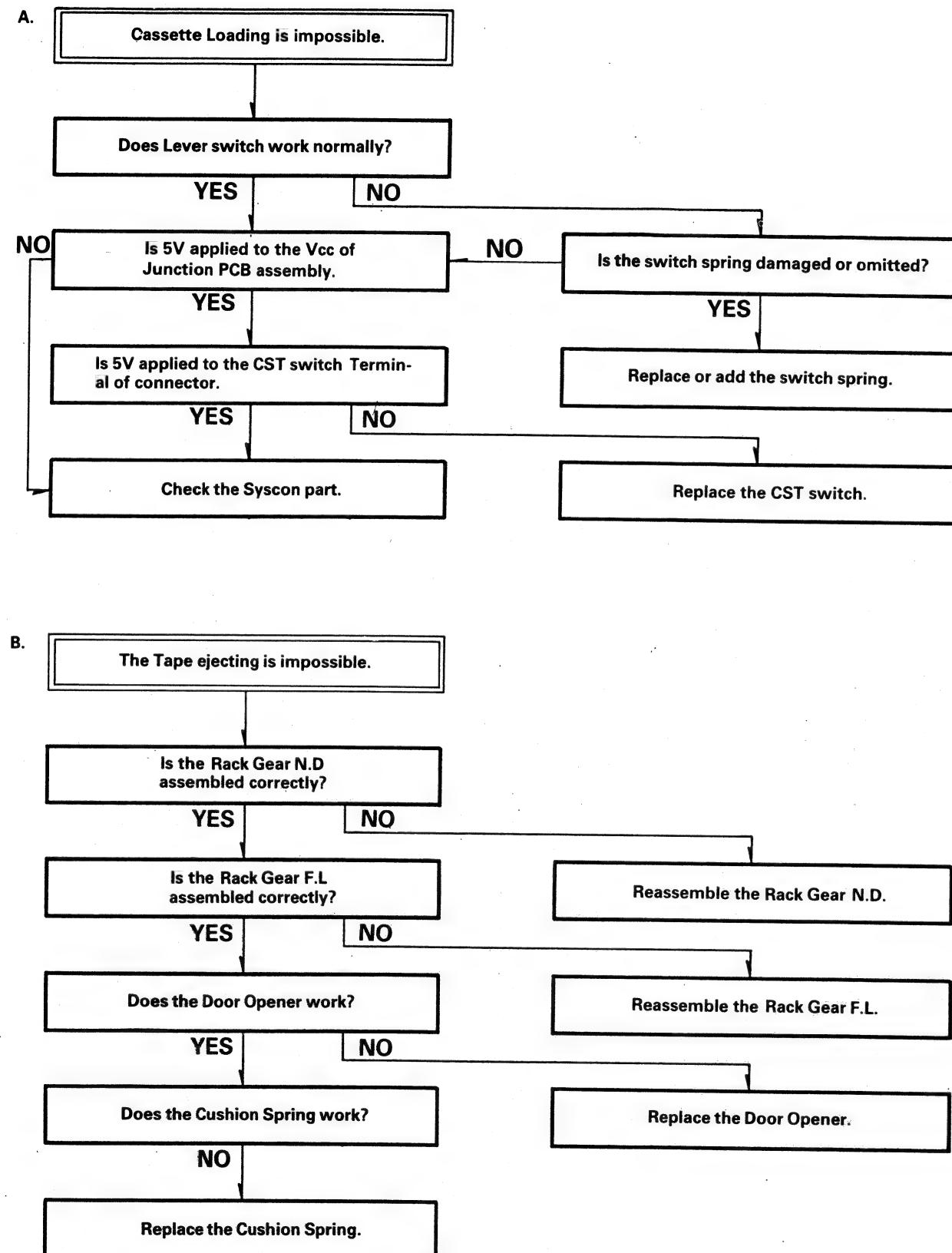
C.










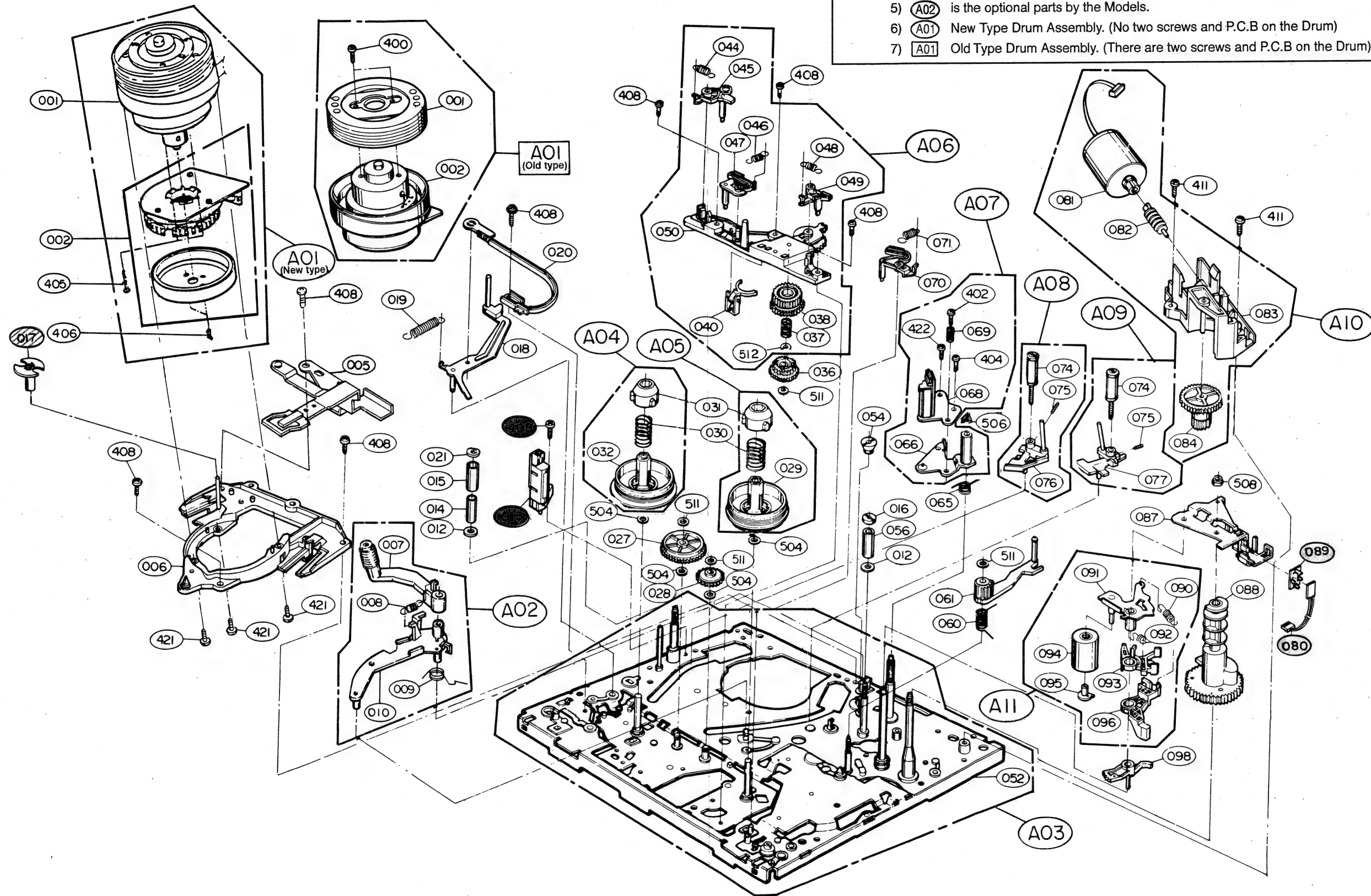
## 2. Front Loading Mechanism



# EXPLODED VIEW

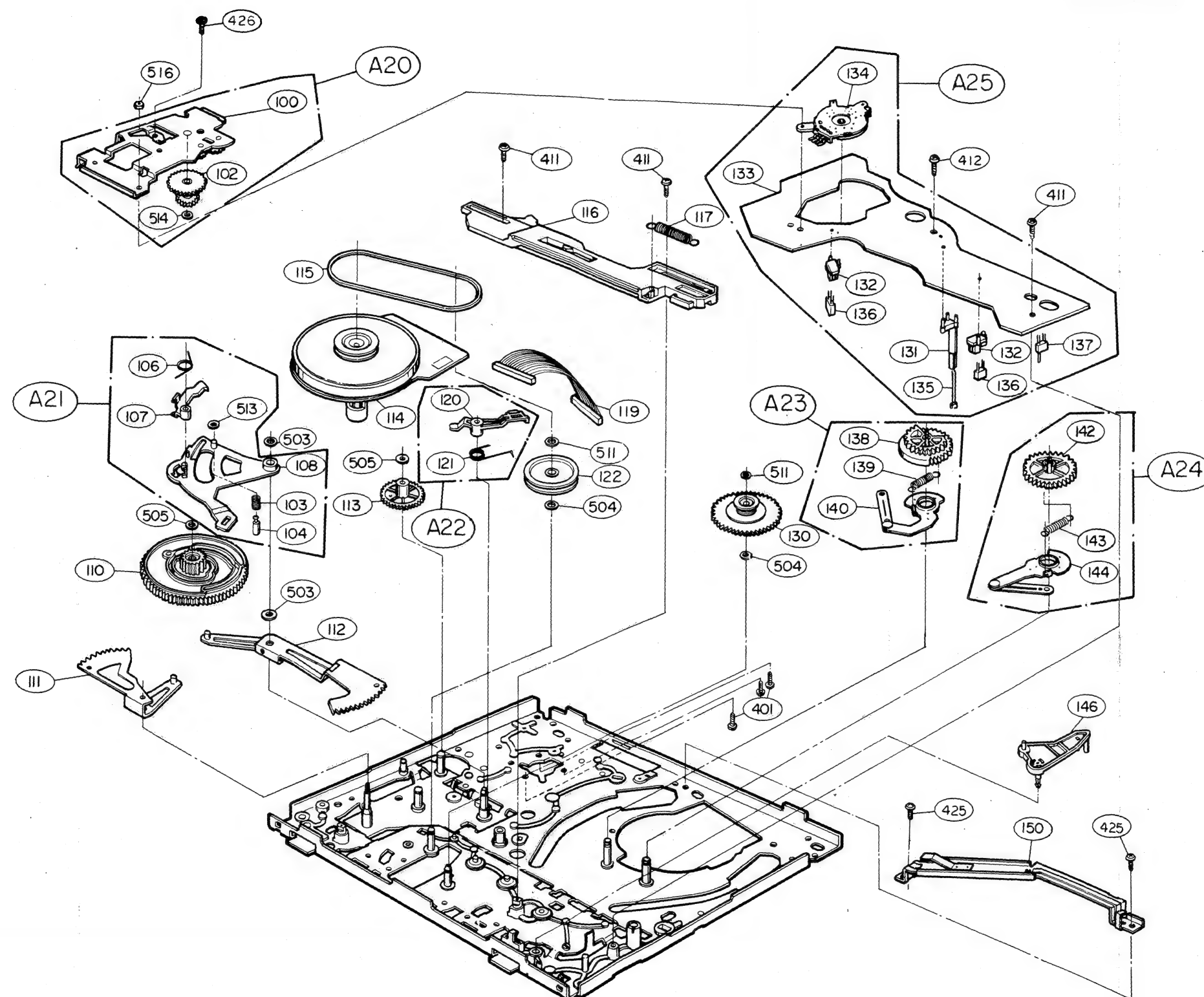
## 1. Moving Mechanism Section(I)

- NOTE)** 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.  
 2)  marks the optional parts only in VCR (Video Cassette Recorder ) Models.  
 3)  marks the optional parts only in VCP (Video Cassette Player) Models.  
 4)  marks the optional parts only in Hi-Fi Models.  
 5) **A02** is the optional parts by the Models.  
 6) **A01** New Type Drum Assembly. (No two screws and P.C.B on the Drum)  
 7) **A01** Old Type Drum Assembly. (There are two screws and P.C.B on the Drum).



A vertical scale with five horizontal tick marks. The numbers 1, 2, 3, 4, and 5 are placed to the left of the tick marks, increasing from bottom to top.

**NOTE) 1)** Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.  
**2)** (119) is the optional parts by the Models.



A

B

C

D

**F**

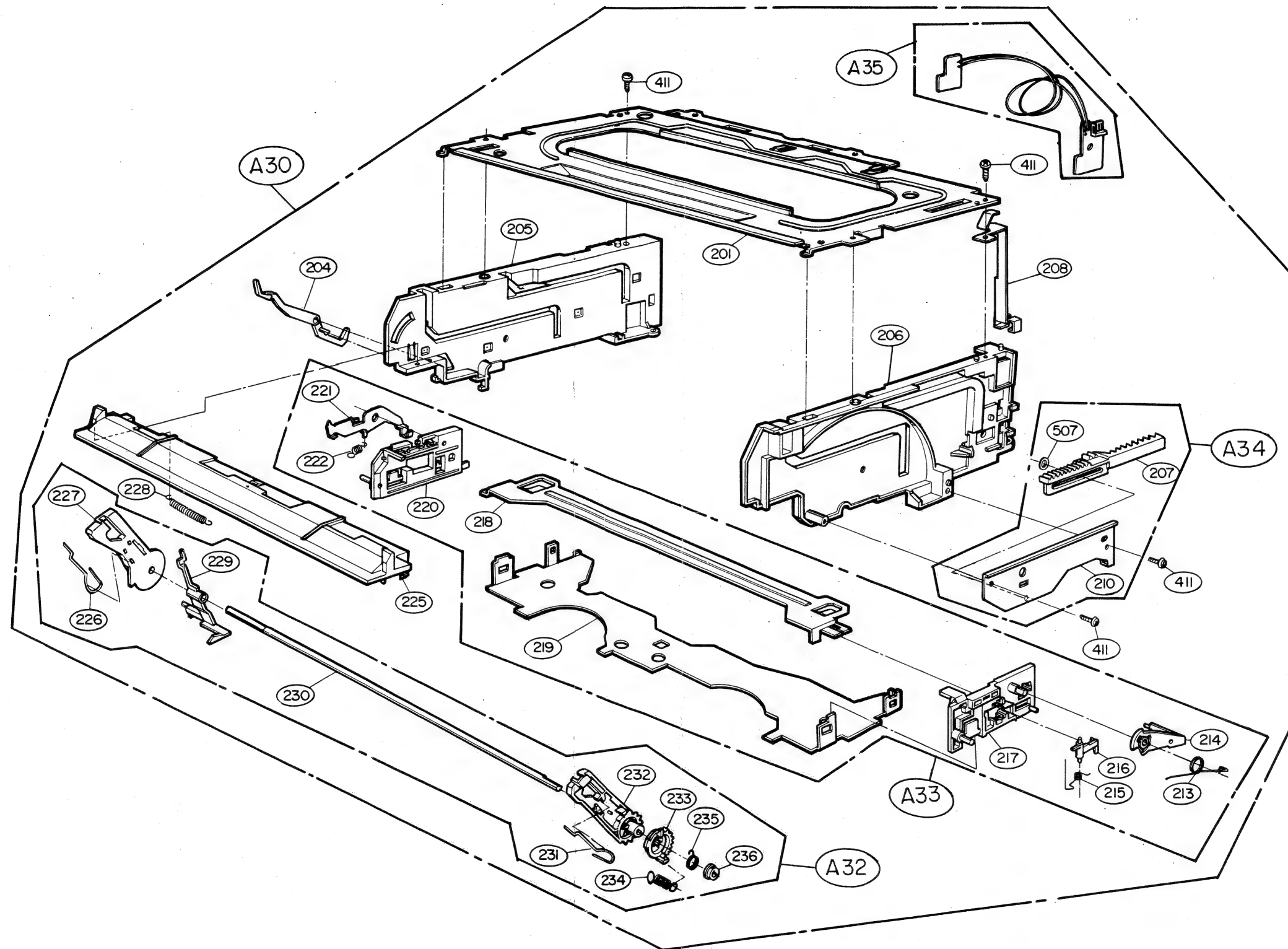
1

---

---

### 3. Front Loading Mechanism Section

NOTE) 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST"  
in order to look for the part number of each part.



A

B

C

D

E

F

G

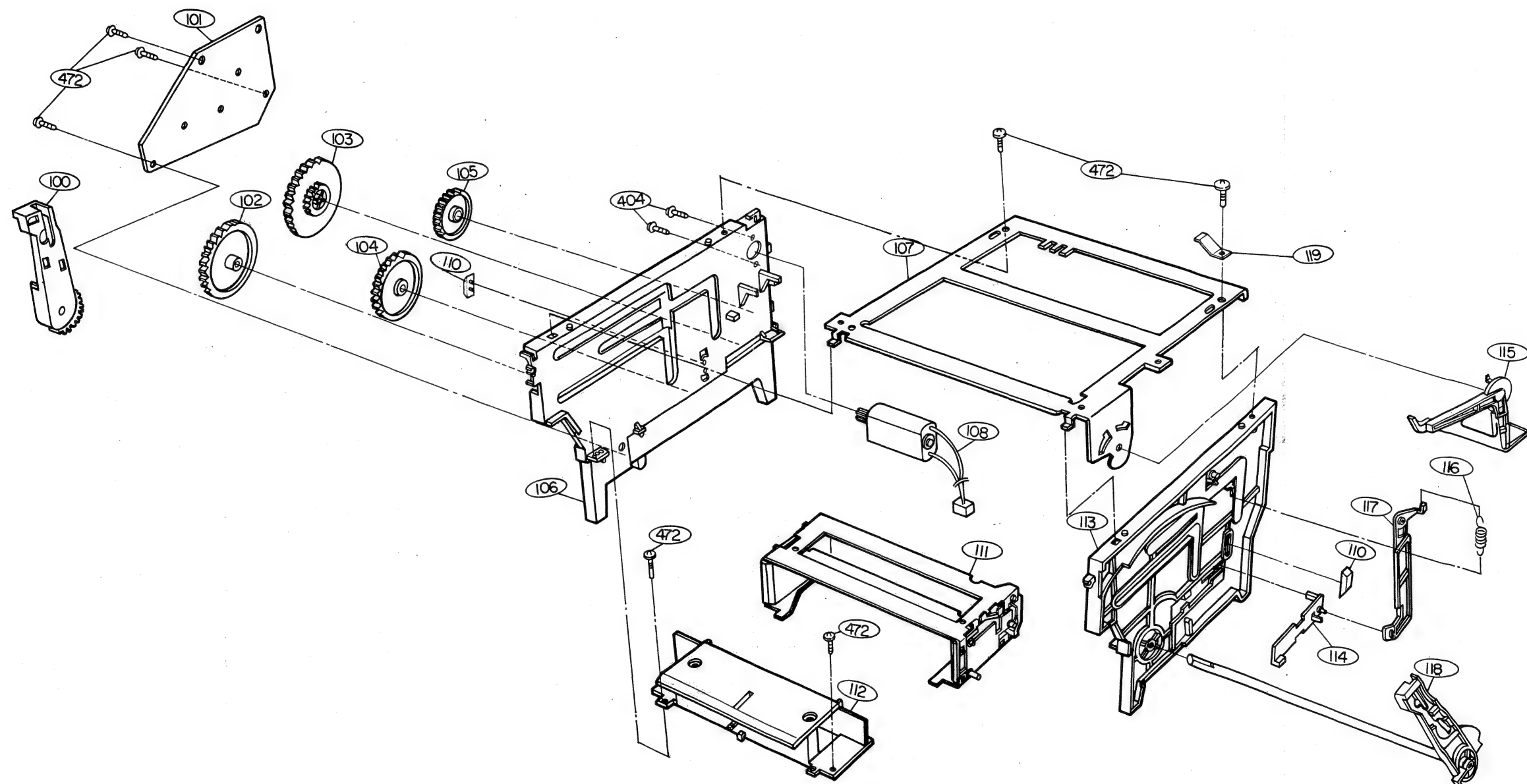
H



#### 4. EXPLODED VIEW

##### 4-1. CASSETTE HOUSING SECTION

NOTE) 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST"  
in order to look for the part number of each part.



A

B

C

D

E

F

G

H

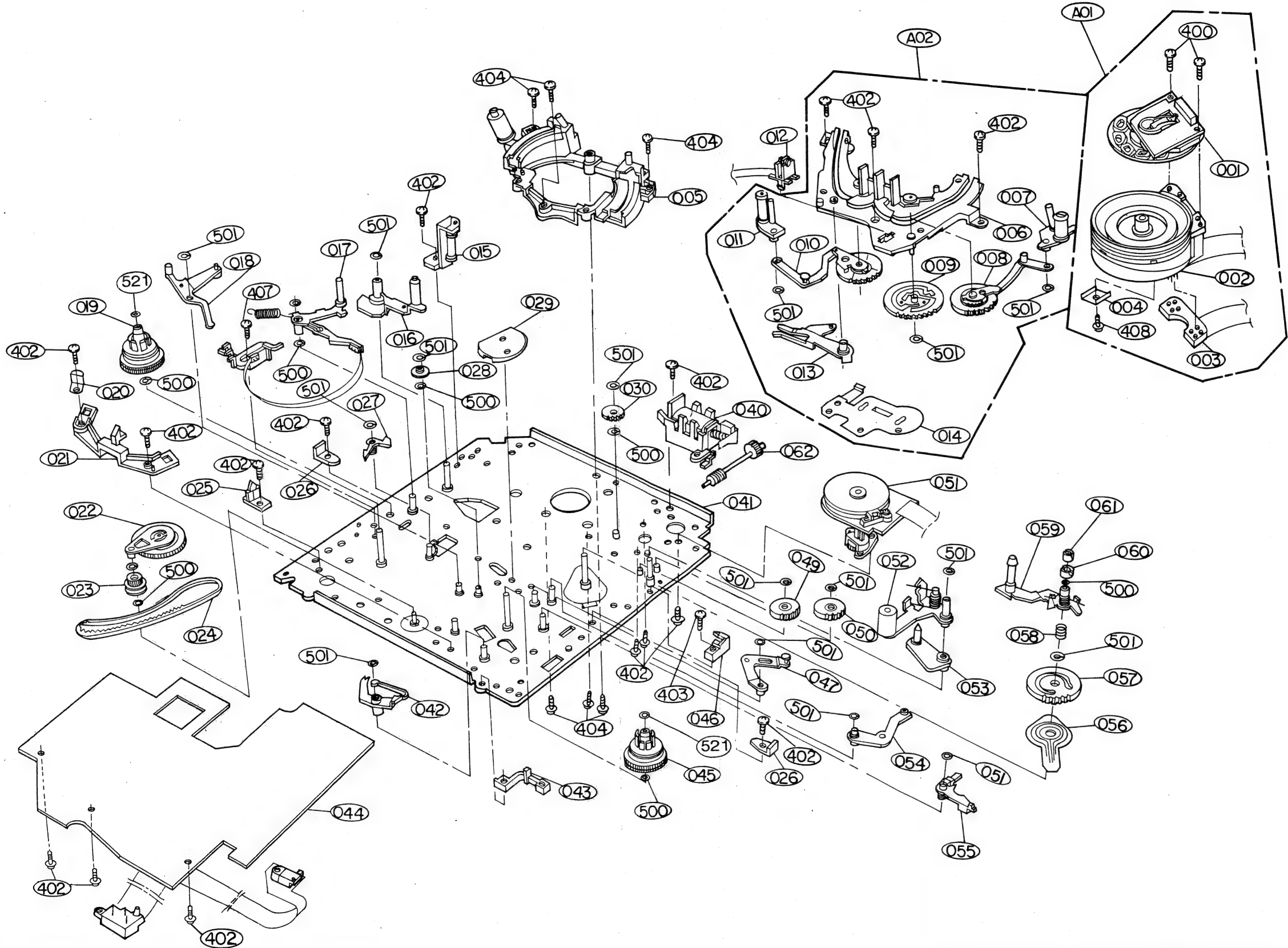
4-71

4-72

4-2. CHASSIS MECHANISM SECTION

NOTE) 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST"  
in order to look for the part number of each part.

5  
4  
3  
2  
1



A B C D E F G H  
4-73 4-74

## SECTION 4-2. 8 mm DECK MECHANISM

### PERIODICAL CHECK AND MAINTENANCE

For the normal operation and the protection of Tape, the periodical checking and maintaining is required like the unit.

Perform the following steps after the adjustment without the used time.

#### 1. ROTARY DRUM ASSEMBLY CLEANING

Stick the smooth swab moistened with the cleaning water fast to the rotary Drum Slightly, and then rotate the Rotary Upper Drum with a finger to the counter-clockwise slowly.

##### NOTE :

Be careful so the Motor is not to rotate the Drum and not to rotate to the clockwise. Do not use the swab moistened with the cleaning water to the Head Vertically.

#### 2. TAPE LOADING COURSE CLEANING

Set the Cassette Compartment to the Eject State or remove it, and then wipe the Tape loading Course (No. 1 Guide~No. 7 Guide Capstan Shaft, Pinch Roller) with the Chamois Leather Moistened in cleaning water.

#### 3. DRIVE SYSTEM CLEANING

Wipe the Drive System (Timing Belt, Surface of Reel Table etc.) with the Chamois Leather moistened in cleaning water.

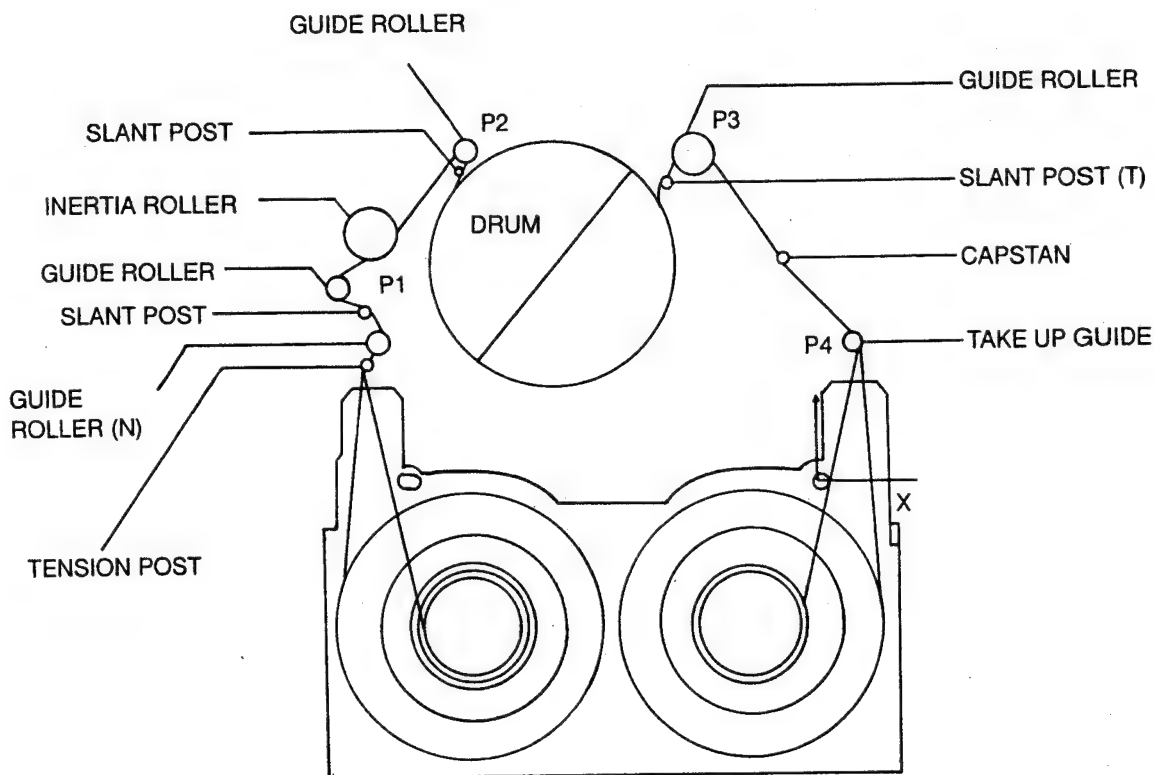


Fig. 4-1-1

## 4. MAINTENANCE TIME TABLE

○ Cleaning ◎ Oiling ☆ Checking

Check Parts		Time (Hours) (H)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Cleaning and Demagnetizing	Tape path surfaces Cleaning	○	○	○	○	○	○	○	○	○	○	Be careful about oil
	Rotary drum assembly Cleaning and demagnetizing	○	○	○	○	○	○	○	○	○	○	Be careful about oil
Drive System	Relay belt	—	☆	—	☆	—	☆	—	☆	—	☆	
	Capstan shaft	—	◎	—	◎	—	◎	—	◎	—	◎	Be careful about that the Oil do not drop on the surface of Tape Path
	Idler pulley axle	—	◎	—	◎	—	◎	—	◎	—	◎	
	Loading Motor	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance Check	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Brake tension Measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD, RVS torque Measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

### NOTE :

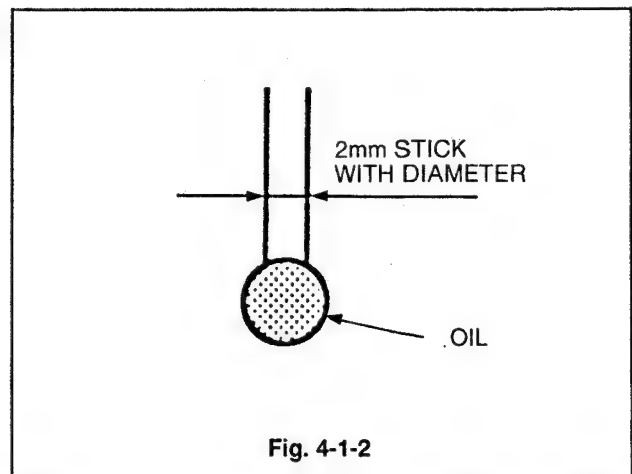
During checking the Unit, refer the Time Table above for the parts change etc.

### Oiling :

- Use the regular Oil always.  
(If the unregular oil is used, the Unit may get damaged.)
- Apply the clean oil on the position used the shaft bearing.
- "Oil 1 drop" means the quantity of degree hanged to the end of 2mm Stick with diameter.  
(Refer to Fig. 4-1-2)

### Grease :

- Use the regular Grease.

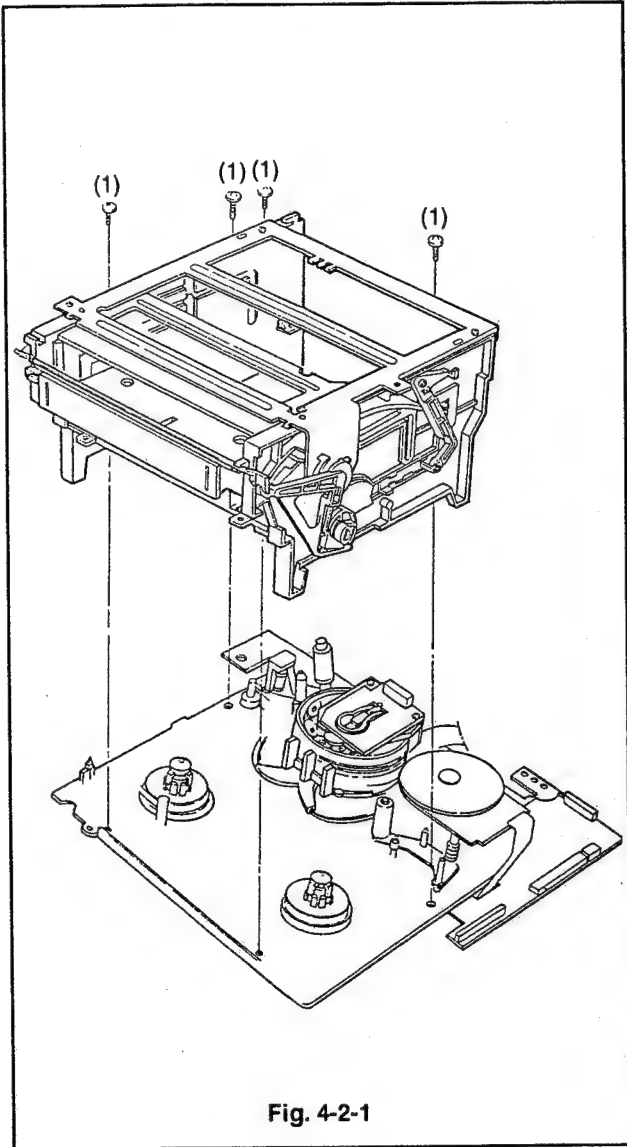


# DECK MECHANISM DISASSEMBLY AND REASSEMBLY

## 1. Front Loading Mechanism

### 1-1. Housing Ass'y Disassembly

- 1) Disassembly (Fig. 4-2-1)
  - (1) Set the unit to the ULC Mode (Unloading Mode).
  - (2) Remove 4 Screw(1) on the upper part and then remove the Housing Ass'y CST.



## 2. DC MOTOR (Capstan motor) ASS'Y

### 2-1. Disassembly (Fig. 4-2-2)

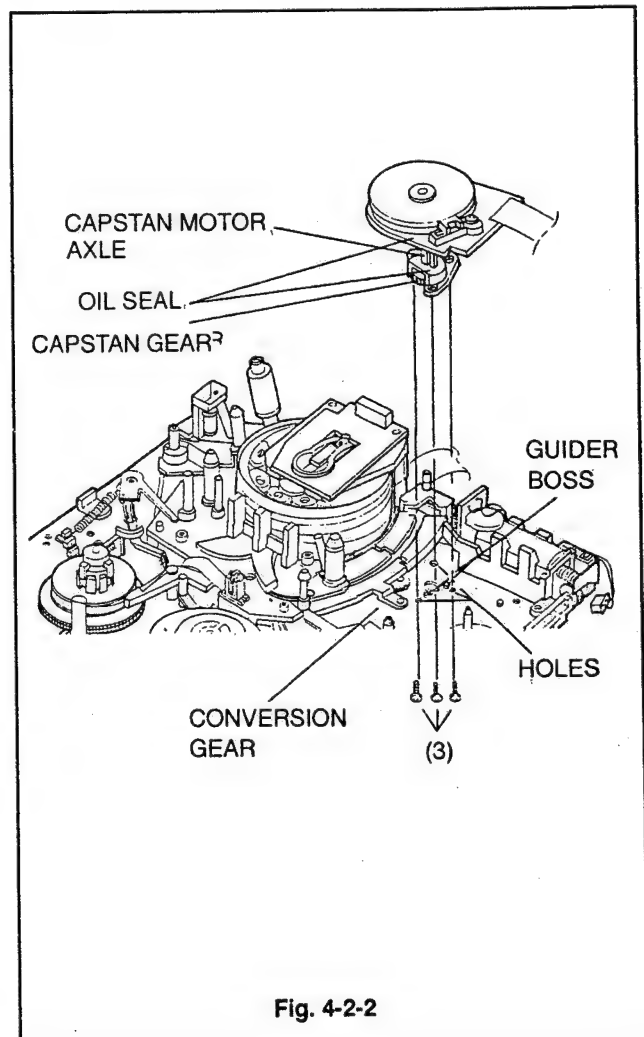
- (1) Set the Unit on the ULC Mode (Unloading).
- (2) Remove the DC Motor Ass'y by releasing 3 Screws(3) on the lower part of the Chassis.

### 2-2. Reassembly (Fig. 4-2-2)

- (1) Engage the Capstan Gear with the conversion Gear by fixing the 2 Guider bosses and 3 Guider Holes on the Upper part of Chassis into the 2 Guider Holes on the Capstan Gear.
- (2) Set the DC Motor Ass'y with 3 Screws(3) on the Lower part of Chassis.

### NOTES :

- Use the about 2kgfcm Torque to fix Screw.
- Do not engage with the Gears by forces, because the Capstan Gear is easy to get damaged.
- Stick the DC Motor fast to the Chassis completely.
- Do not touch the Capstan motor Axle, Oil Seal and Rotor.

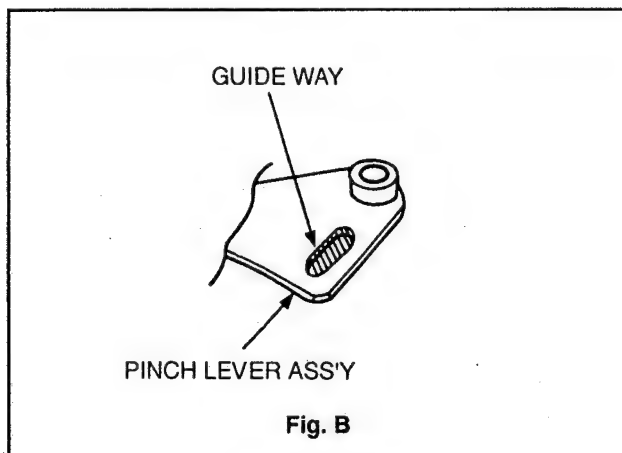
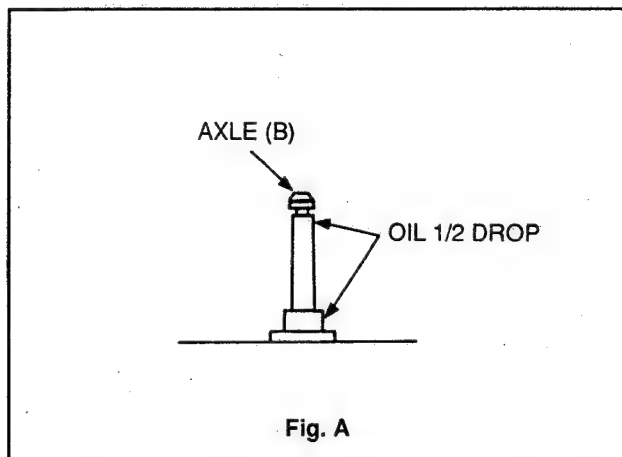




### 3. PINCH ARM ASS'Y AND PINCH LEVER ASS'Y

#### 3-1. Disassembly (Fig. 4-2-3)

- (1) Set the Unit to the ULC Mode.
- (2) Remove the Pinch Arm Ass'y by removing the stopper Washer.
- (3) Remove the Pinch Lever Ass'y.

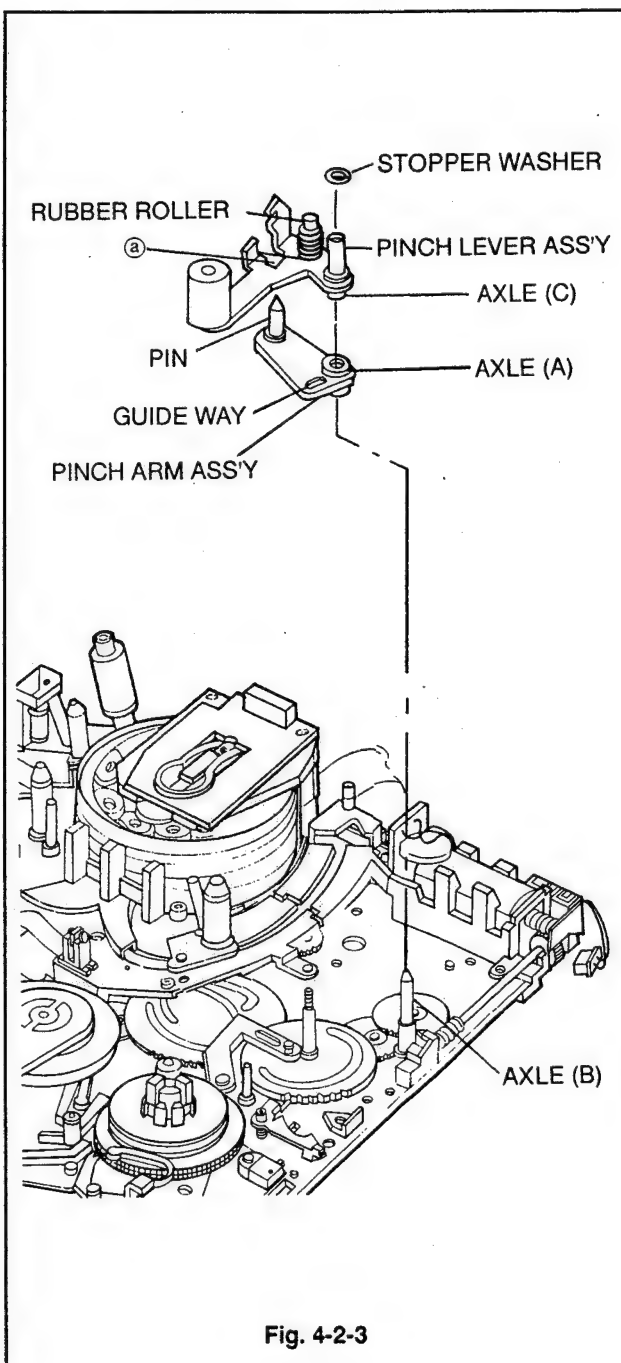


#### 3-2. Reassembly (Fig. 4-2-2, 4-2-3)

- (1) Apply Oil 1/2 drop to the Axle(B) 2 point.
- (2) Apply grease in the in side of Guide on the Pinch Lever Ass'y (Fig. B).
- (3) Stick the Axle(A) of Pinch Lever Ass'y in the Axle B and assemble so the Roller is to be approached to the Guide Way.
- (4) Assemble so the Pinch Lever Ass'y pin is stuck in the (a) point by inserting the Pinch Arm Ass'y Axle(C) in the Axle (reassembling state).
- (5) Set the Stopper Washer.

#### NOTES :

- Be careful the Nut is not to touch the Rubber Roller when reassembling the Pinch Arm Ass'y to Axle.
- Be careful the object material is not to stain the outer surface of Rubber Roller.



## 4. TAKE UP ARM ASS'Y

### 4-1. Disassembly (Fig. 4-2-4)

- (1) Set the Unit to the ULC Mode.
- (2) Remove Nut(A) by using the (-) Driver.
- (3) Remove Nut(B) by using the exclusive Driver.
- (4) Remove the Slide Washer.
- (5) Remove the Take Up Arm Ass'y.  
At this time, remove after the Spring Arm ③ point is to be supported to the Vertical Bending part ④ point of Take Up Arm Ass'y.
- (6) Remove the Spring.

### 4-2. Reassembly (Fig. 4-2-4)

- (1) Apply the Oil 1/2 drop on the Axle.
- (2) Assembly the Compression Spring, Take Up Arm Ass'y, Slide Washer, Nut(B) and Nut(A) to the Axle.
- (3) Strain the Spring Arm ③ point of Take Up Arm Ass'y to the front to be stopped by sticking in the in side of Take Up Lever Ass'y Pin.

### 4-3. Take Up Arm Ass'y Height Adjustment

- (1) Adjust to 3mm the height between the Cassette install standard side of Loading Base and the Frange Upper side of Take Up Arm Ass'y.

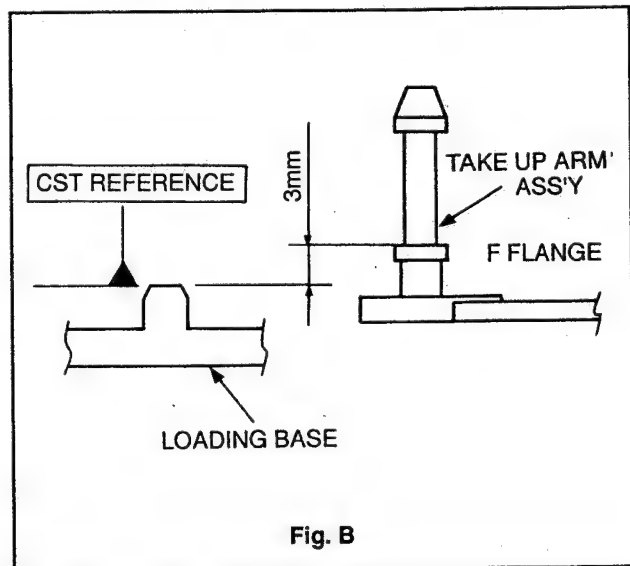


Fig. B

### NOTES :

- Do not force the Spring Arm unreassembly during disassembly and reassembly, it may cause the transformation of spring.
- Readjust the Take Path after reassembly.

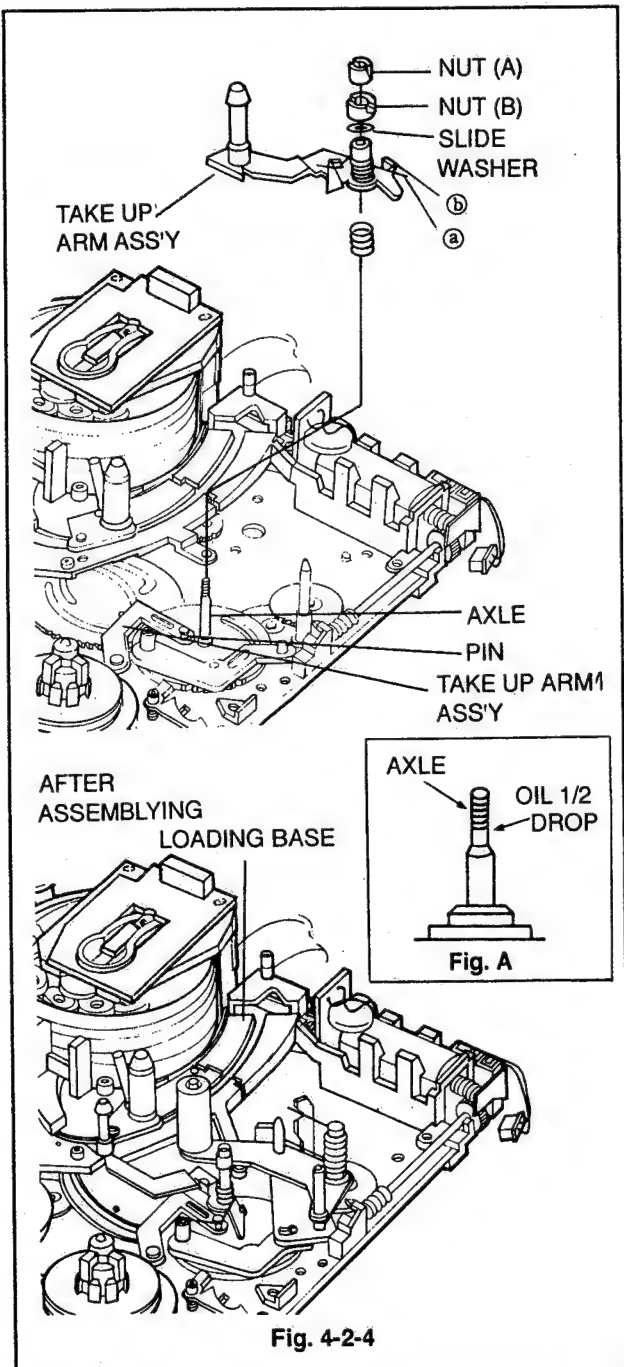


Fig. 4-2-4

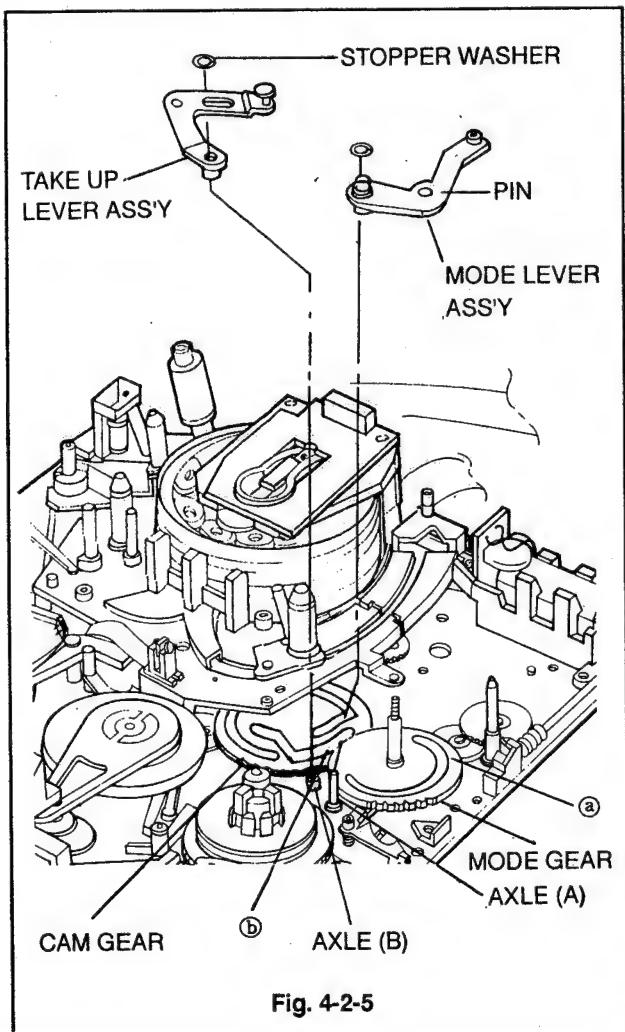
## 5. MODE LEVER ASS'Y and TAKE UP LEVER ASS'Y

### 5-1. Disassembly (Fig. 4-2-5)

- (1) Set the Unit to ULC Mode.
- (2) Remove the Stopper Washer and then remove the Mode Lever Ass'y.
- (3) Remove the Stopper Washer and then remove the Take Up Lever Ass'y.

### 5-2. Reassembly (Fig. 4-2-4, 4-2-5)

- (1) Apply the Grease in the CAM trace ① of Mode Gear.
- (2) Apply the Oil 1/2 drop to the Axle.
- (3) Stick the Mode Lever Ass'y pin in the CAM trace ① of Mode Gear and then assemble the Mode Lever Ass'y to the Axle(A).
- (4) Set the Stopper Washer.
- (5) Apply the Oil 1/2 drop to the Axle(B).
- (6) Stick the Take Up Lever Ass'y pin in the CAM trace ② of CAM Gear and then assemble the Take Up Lever Ass'y to the Axle.
- (7) Set the Stopper Washer.



## 6. SOFT BRAKE ASS'Y AND T/BAND PROTECT

### 6-1. Disassembly (Fig. 4-2-6)

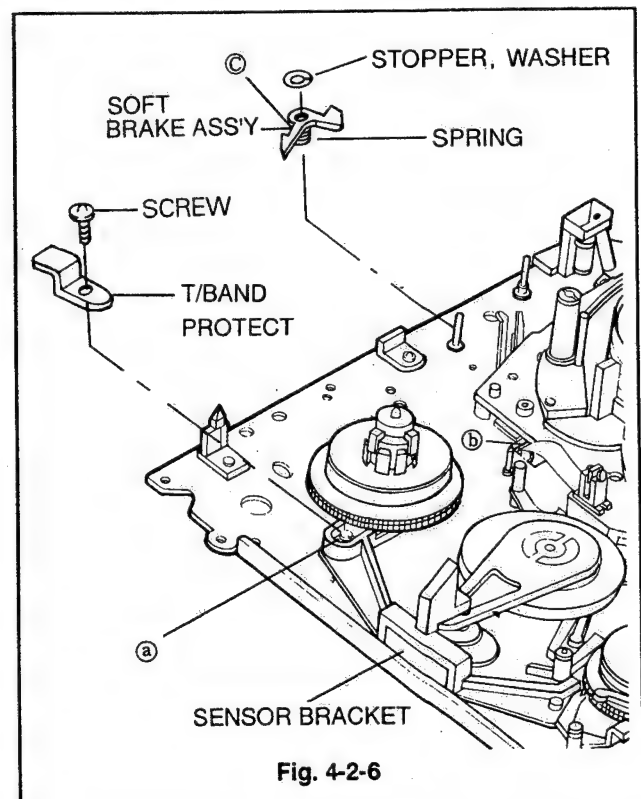
- (1) Set the Unit to the ULC Mode.
- (2) Hook the Spring Arm point ③ stuck in the Vertical Bending part point ④ on the Upper part of Chassis to the Spring hanger of Soft Brake Ass'y.
- (3) Remove the Stopper Washer and then remove the Soft Brake Ass'y.
- (4) Release the Screw and remove the T/Band Protect.

### 6-2. Reassembly

- (1) Stick the T/Band Protect in the Sensor Bracket point ①.
- (2) Set the Screw to point ② using the (+) Driver.
- (3) Set the Soft Brake Ass'y to the Axle.
- (4) Set the Stopper Washer.
- (5) Assemble the Spring Arm point ③ stuck in the Soft Brake Ass'y supports the Vertical Bending part point ④ on the upper part of Chassis.

### NOTES :

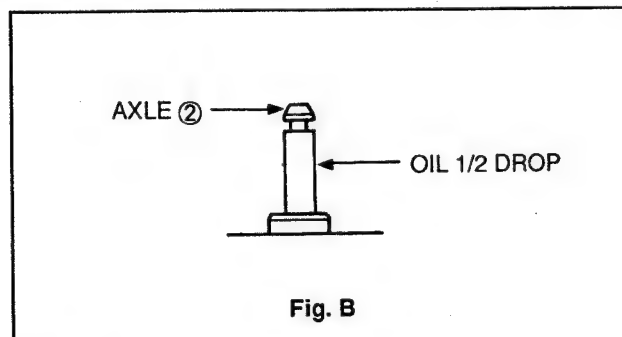
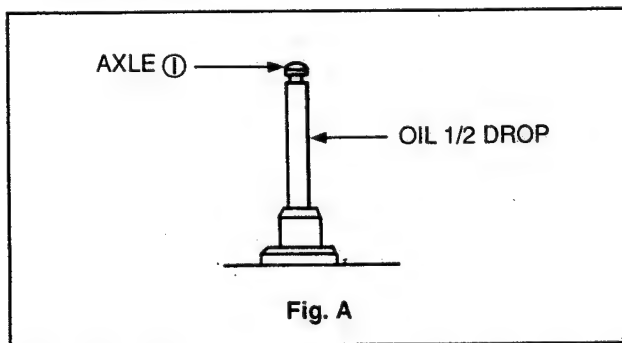
- Use the about 1.2kgf • cm Torque to fix the T/Band Protect Set Screw.
- Do not force the Spring Arm ③ unreassembly, it may cause the transformation of Spring.
- During T/Band Protect assembling, be careful the Reel Ass'y Gear not to be denaged.



## 7. TENSION REGULATOR ASS'Y AND SLANT ROLLER ARM ASS'Y

### 7-1. Disassembly (Fig. 4-2-6, 4-2-7)

- (1) Set the Unit to the ULC Mode.
- (2) Hook the Spring Arm point ① to the Spring Hanger point ② of Slant Roller Arm Ass'y.
- (3) Remove the Stopper Washer and then remove the Slant Roller Arm Ass'y.
- (4) Remove the Spring Hook of Tension Regulator Ass'y from the Spring Hanger point ③ of Bracket.
- (5) Remove the Screw using the (+) Drive.
- (6) Remove the Stopper Washer and then remove the Tension Regulator Ass'y.
- (7) Remove the Slide Washer.



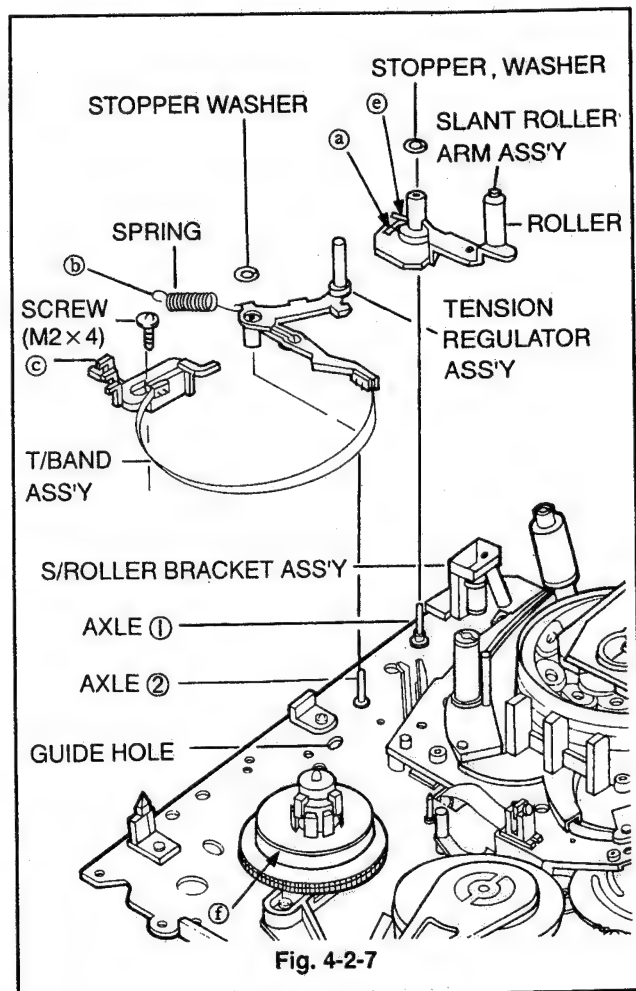
#### NOTES :

- Be careful so the Band is not to be distorted or folded and the Felt is not to be dirtied by an object material during disassembly the Tension Regulator Ass'y.
- Be careful so the Roller surface is not to be dirtied by an object material during disassembling the Slant Roller Arm Ass'y.

### 7-2. Reassembly (Fig. 4-2-7, 4-2-8)

- (1) Assemble the Slide Washer to the Axle ②.
- (2) Apply the Oil 1/2 drop to the Axle ②.
- (3) Assemble the Felt side of T/Band Ass'y with the point ① part of S-Reel Ass'y correctly by sticking the Tension Regulator Ass'y on the Axle.
- (4) Assemble the Bracket Guider boss of T/Band Ass'y to accord with the Guide Hole on the upper part of Mechanism Chassis, and then set the Screw.

- (5) Assemble the Stopper Washer on the Axle ②.
- (6) Put up the Spring Hook at the middle point of Bracket Spring Hanger ③.
- (7) Apply the Oil 1/2 drop to the Axle ①.
- (8) Assemble the Slant Roller Arm Ass'y on the Axle ①.
- (9) Set the Stopper Washer to the Axle ①.
- (10) Adjust the position of Tension Regulator FWD.
- (11) Put up the Spring Hook ④ at the middle Claw of Bracket Spring Hanger ③ on the T/Band Ass'y.



#### NOTES :

- During assembling the Tension Regulator Ass'y, be careful the Band is not to be distorted or folded and the Felt is not to be dirtied by an object material.
- Use the about 1.2kgf • cm Torque to fix the Bracket Set Screw.
- During assembling the Slant Roller Arm Ass'y, be careful the Roller surface is not to be dirtied by an object material.

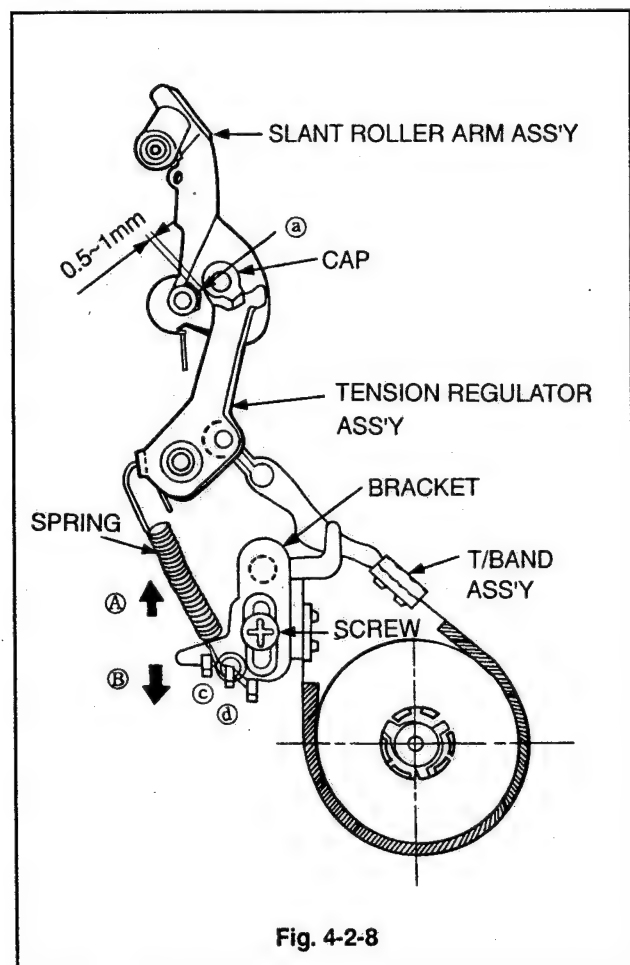
## 8. TENSION REGULATOR FWD POSITION AND BACK TENSION ADJUSTMENTS

### 8-1. FWD position Adjustment

- (1) Set the Unit to the FWD Mode after Loading a Cassette Tape. (Loading make)
- (2) Make Sure the gap between the edge of cap on the Tension Regulator Ass'y and the edge of Boss point ② on the Slant Roller Arm Ass'y is 0.5~1mm.  
If the gap is over the range, adjust the next step after ejecting the Cassette Tape.
- (3) Remove the Set Screw of the Bracket on the T/Band Ass'y.
- (4) If the measuring gap is farther than the range, draw the Bracket up to the Direction of arrow ④, and if the gap is nearer than the range, thrust the Bracket to the direct on of arrow ③, and then set the Screw.
- (5) Check the gap is in the range value by adjusting steps(1), (2) repeatedly.

### NOTES :

- Use a Cassette Tape wound about half.



### 8-2. Back Tension Adjustment (Fig. 4-2-8)

- (1) Load the Torque Cassette Tape in the Unit and set the Unit to Ope-Mode after step, adjustment. (Forward Play Mode).
- (2) Check the Back Tension Torque of the Supply side is in  $6.5 \pm 2$  (gf • cm).
- (3) Otherwise, adjust the Spring hanger position of Bracket as follows;
- (4) If the measurment value is more than the range, put the Spring Hook up to the Hanger ③, and if it is less than the range, put the Spring Hook up to the Hanger ④.
- (5) Make sure the Back Tension is in the range value by adjusting steps(1), (2) repeatedly.

### 8-3. Reel Torque Checking

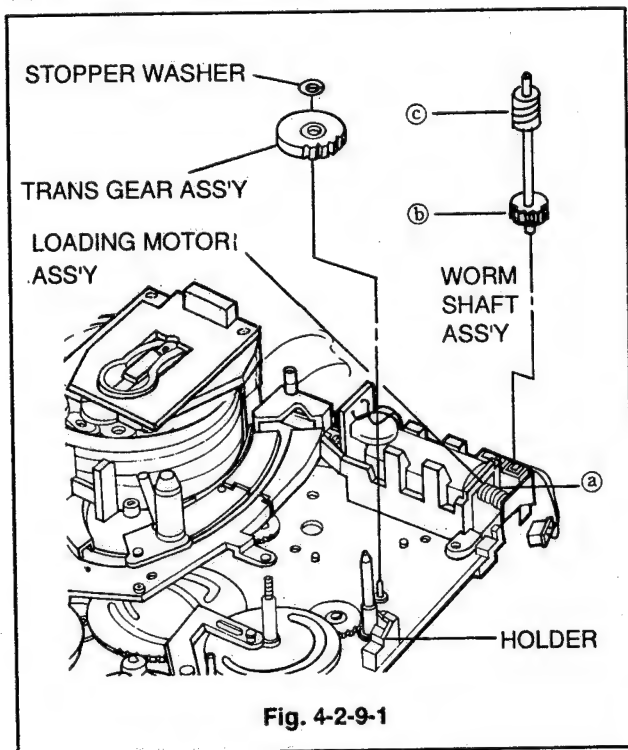
- (1) Load the Torque Cassette Tape in the Unit.
- (2) Set the Unit to FWD Mode and check the Torque on the T Reel Table is in  $12.5 \pm 4$  gf • cm.
- (3) Set the Unit to REV Mode and Check the Torque on the S Reel Table is in  $12.5 \pm 4$  gf • cm.
- (4) Set the Unit REV Mode and Check the Torque on the T Reel Table is in  $12.5 \pm 4$  gf • cm.
- (5) If each Torque Value is over the range, change the Reel table.



## 9. WORM GEAR ASS'Y MIDDLE GEAR, TRANS GEAR ASS'Y, LOADING MOTOR ASS'Y AND BRACKET ASS'Y

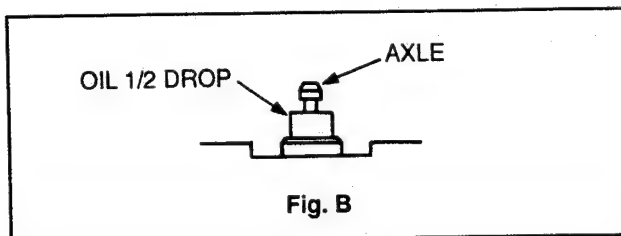
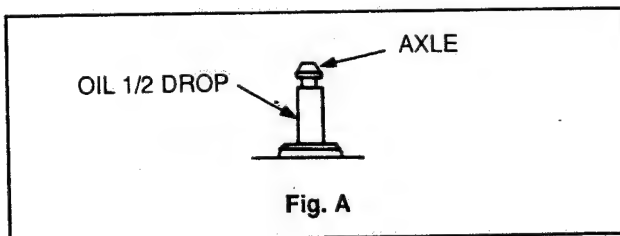
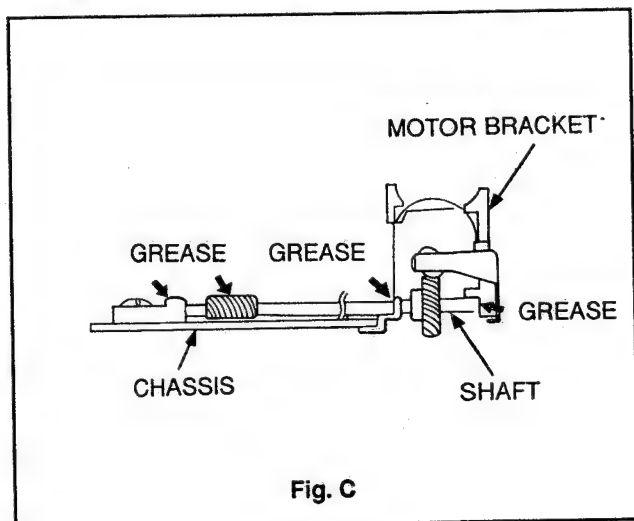
### 9-1. Disassembly (Fig. 4-2-9-1, 4-2-9-2)

- (1) Remove the Screw for removed the Loading Motor Ass'y (Fig. 2-9-2). At this time, the Worm Gear Ass'y is disassembled simultaneously with the Loading Motor Ass'y ① and Worm Gear Ass'y ② in gear together. (Fig. 4-2-9-1)
- (2) Remove the Loading Motor Ass'y and Worm SHAFT Ass'y. (Fig. 4-2-9-1)
- (3) Remove the Stopper Washer and remove the Trans Gear Ass'y.
- (4) Remove the Stopper Washer and remove the Middle Gear.
- (5) Release the Screw to remove the Bracket Ass'y.



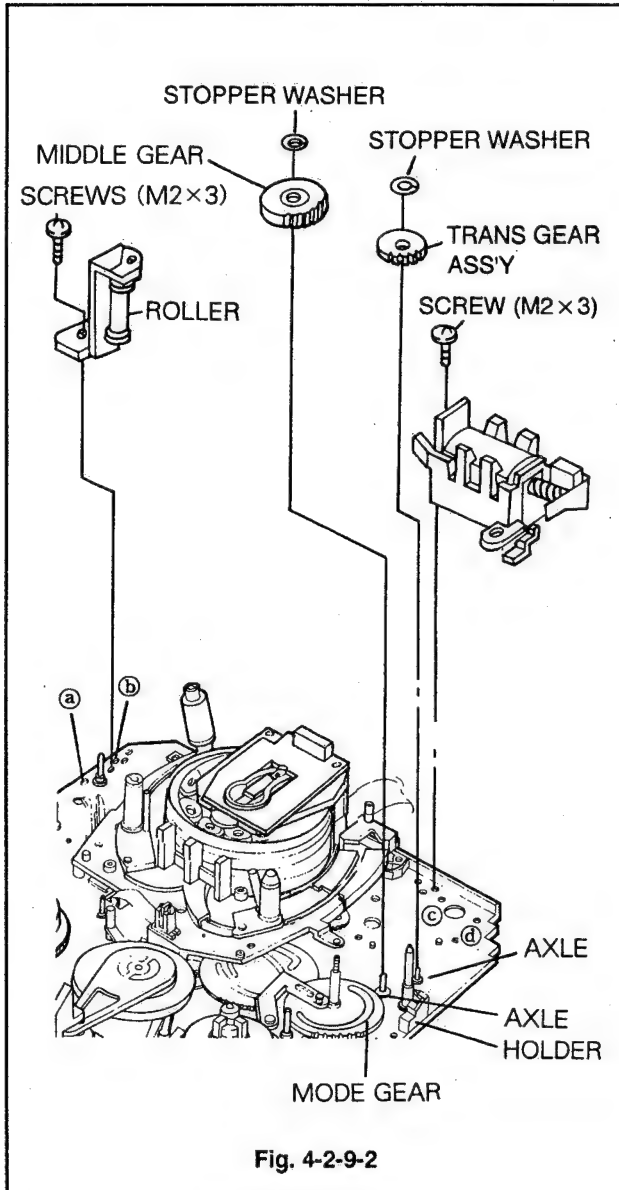
### 9-2. Reassembly (Fig. 4-2-9-2)

- (1) Assemble the Guide Bosses 2 points of Bracket Ass'y to accord with the Guide Holes "a" and "b" on the upper part of Mechanism Chassis, and then set the screw.
- (2) Apply the Oil 1/2 drop on the Axle.
- (3) Go in gear the Mode Gear with Middle Gear by sticking on the Axle.
- (4) Set the stopper Washer to the Axle.
- (5) Assemble the Guide Bosses 2 points on the Lower part of Loading Motor Ass'y to accord with the Guide Holes "c" and "d" on the upper part of Mechanism Chassis and then set the Screw.
- (6) After the Gear point ② of Worm Gear Ass'y is to be toward below, stick it into the Gear ① bottom of Loading Motor Ass'y, and fix the Shaft end tip is to be supported to the Loading Motor Bracket first tip, and then assemble the other side of Shaft by pushing from inside of Holder to outside.
- (7) Apply the GREASE on the parts. (Fig. C)
- (8) Apply the Oil 1/2 drop on the Axle.
- (9) Go in gear with the Middle Gear and Worm Gear Ass'y Gear ③ together by sticking the Trans Gear Ass'y on the Axle.
- (10) Set the Stopper Washer on the Axle.



#### NOTES :

- Do not in gear the Gears by force during dis-assembly/reassembly of Gear, bited each other.
- During assembling the Bracket Ass'y, be careful the Roller surface is not to be dirtied by an object material.
- Use the about 1.2kgf • cm Torque to fix the Screw.



### 10. LOADING BASE ASS'Y, MODE GEAR ASS'Y AND EJECT LEVER ASS'Y

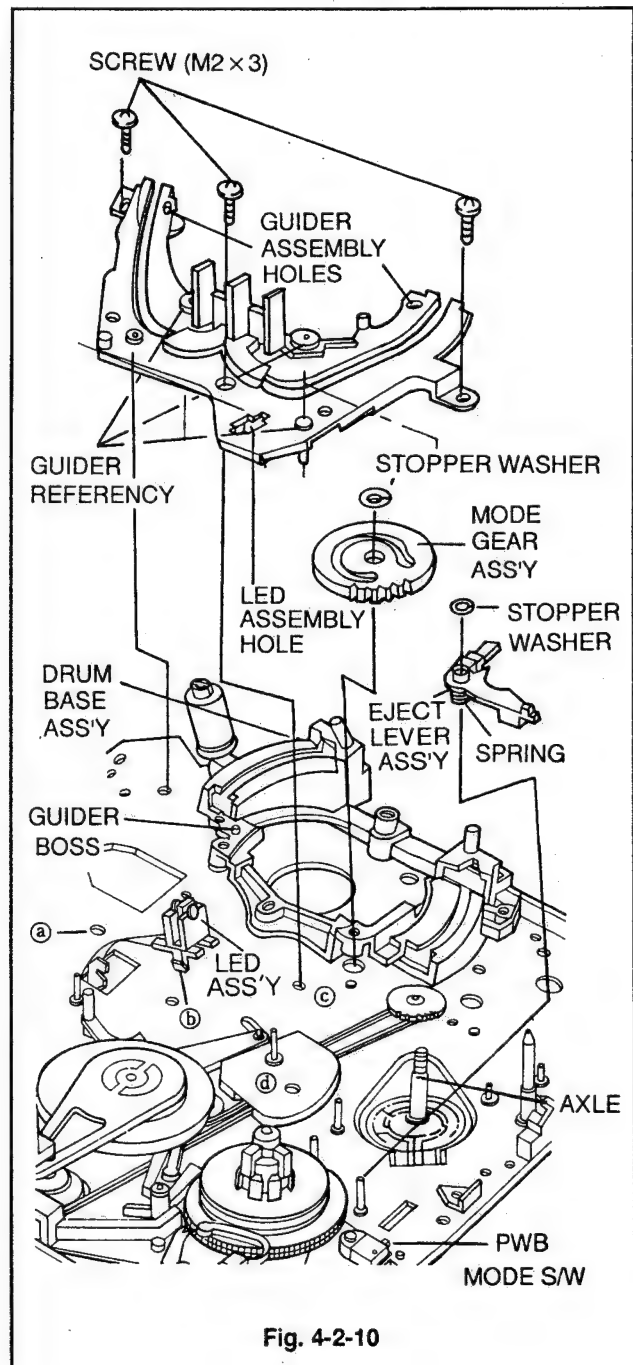
#### 10-1. Disassembly (Fig. 4-2-10)

- (1) Remove the LED Ass'y from the Led assembly Hole of Loading Base Ass'y.
- (2) Remove 3 Screws and then remove the Loading Base Ass'y.

- (3) Release the Stopper Washer and remove the Mode Gear Ass'y.
- (4) Hook the Spring Arm point ② of Eject Lever Ass'y by pushing to the front to the Spring Hanger of Eject Lever Ass'y.
- (5) Remove the Stopper Washer and then remove the Eject Lever Ass'y.

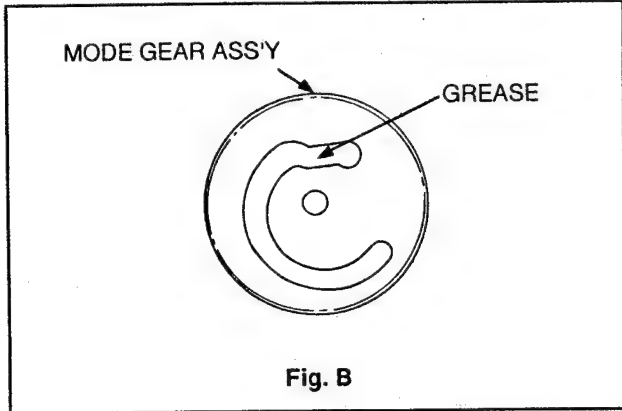
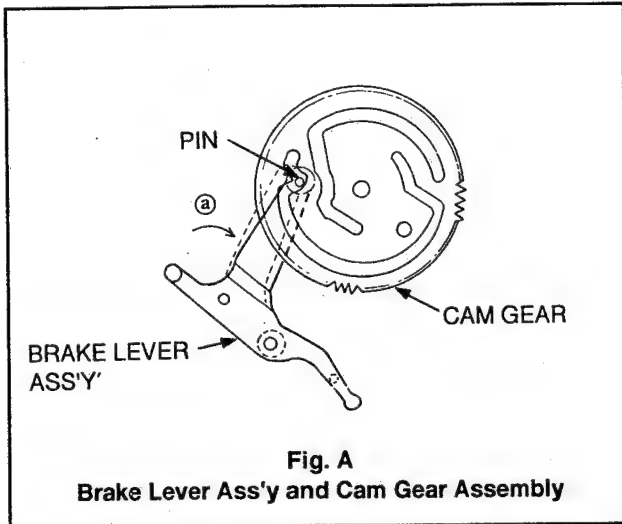
#### NOTES :

- Be careful the Led Ass'y Hook is not to damage during disassembly the LED Ass'y from the Led assembly Hole of Loading Base Ass'y.



## 10-2. Reassembly (Fig. 4-2-10)

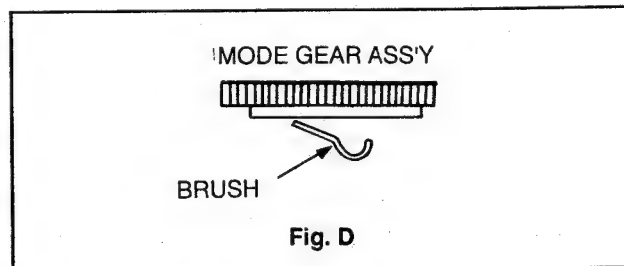
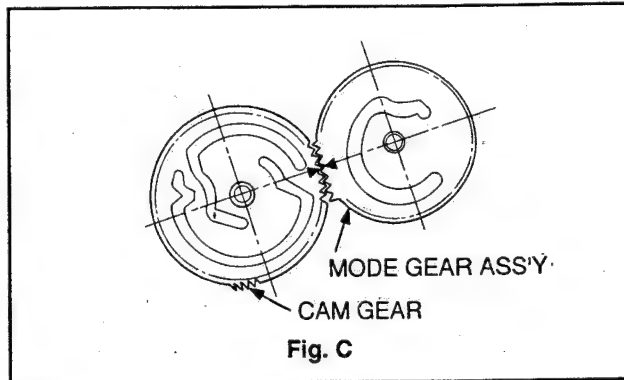
- (1) Fix the Guide Basic 4 pins of Loading Base Ass'y to the refuge holes "a", "b", "c" and "d" formed on the upper part of Mechanism Chassis. Stick the Pin into the Gear trace of outer Cam formed on the Cam Gear by pushing the Brake Lever Ass'y slightly in the direction of arrow, and then stick the Guide Basic 4 Pins of Loading Base Ass'y fast to Guide 2 Holes by pressing from above to below. (Fig. A)
- (2) Set 3 Screws to "T1", "T2" and "T3" on the upper part of Mechanism Chassis.



- (3) Assemble the Eject Lever Ass'y on the Axle, and Set the Stopper Washer on it.
- (4) Wipe the surface of PWB Mode S/W with the cotton stick with the cleanser.
- (5) After the cleanser is dried completely, Apply the Grease to the point of contact evenly and thinly.
- (6) Apply the Grease on the Mode Gear Ass'y Cam formative parts.
- (7) Go in gear the Cam Gear with the Mode Gear Ass'y by sticking on the Axle. (Fig. C)

## (Assembly Method)

Go in gear with together so the intaglioed arrow edge to accord on the line connected to the middle of Mode Gear Ass'y and the middle of Cam Gear.



- (8) Set the Stopper Washer on the Axle.
- (9) Push the Spring Arm point ③ of Eject Lever Ass'y from the Spring hanger to below to be supported to the sidewall of CST S/W.
- (10) Apply the Grease on the deviant lines of Loading Base Ass'y (Fig. 4-2-11).
- (11) Stick the Led Ass'y into the Led Ass'y Hold of Loading Base Ass'y.

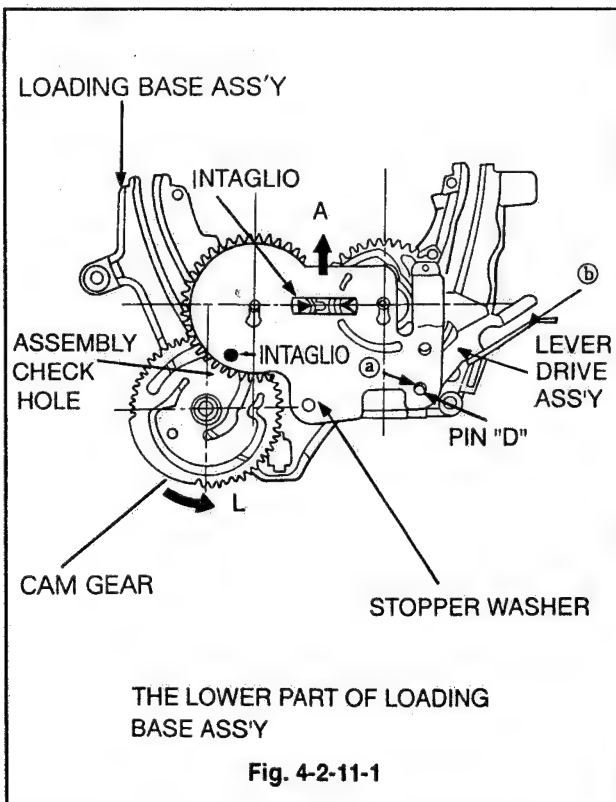
## NOTES :

- Use the about 1.2kgf • mm Torque to set 3 Screws.
- Do not force unreasonably, during disassembly and reassembly it may cause the transformation of Gear.
- Be careful so the Roller(S), (T) is not to be dirtied by an object material.
- Take the Led Ass'y Hook and Loading Base Ass'y not to be transformed during assembling the Led Ass'y to the Led Ass'y Hole of Loading Base Ass'y.
- Be careful so the Brush on the Lower part is not to be transformed during handling the Mode Gear Ass'y (Fig. D).
- Do not gear in the Mode Gear Ass'y and Cam Gear by force during assembling, the Gear parts may get damaged.
- Take the Spring Arm ③ of Eject Lever Ass'y not to be transformed by force.

## 11. GEAR LOADING ASS'Y(S), (T), SLANT BASE ASS'Y(S), (T), CAM GEAR AND LEVER DRIVE ASS'Y

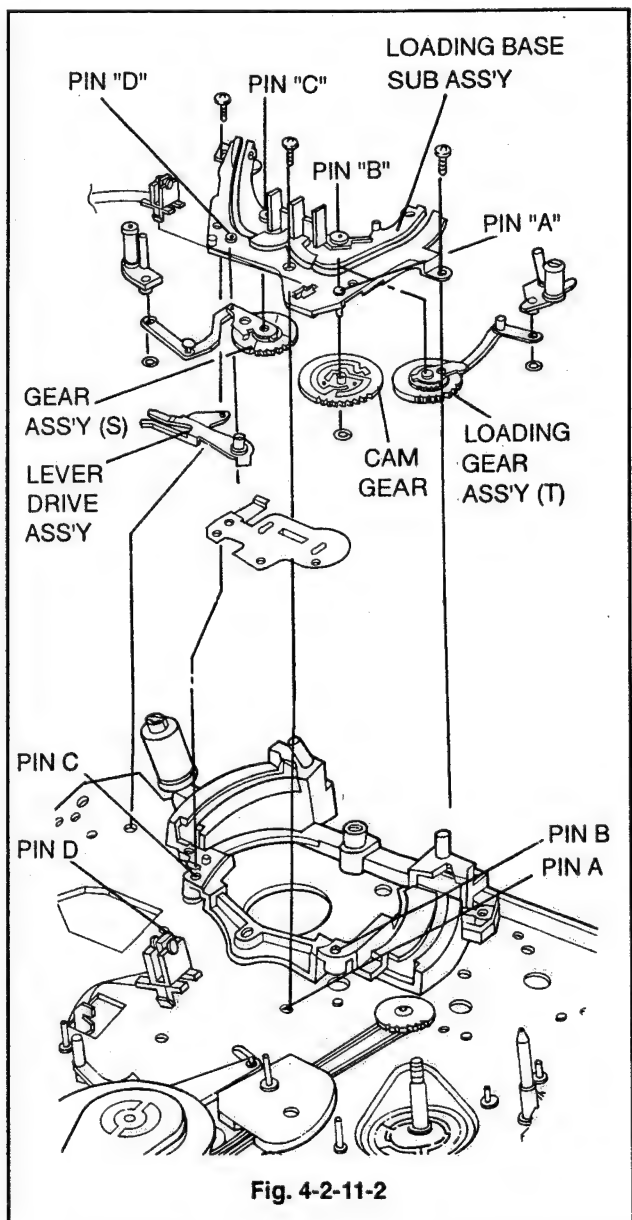
### 11-1. Disassembly (Fig. 4-2-11-1, 4-2-11-2)

- (1) Turn the Loading Base Ass'y over, and remove the part ③ of stopper Plate from Pin "D" by raising and then remove the Stopper Plate by Pushing and raising to "A" direction (to above). (Fig. 4-2-11-1)
- (2) Remove the Lever Drive Ass'y from Pin "D" on the Loading Base Sub Ass'y.
- (3) Turn the Cam Gear to the "L" direction to stop the rotating. At this time the Slant Base Ass'y(S), (T) also move forward because the Loading Gear Ass'y(S), (T) is rotated (Fig. 4-2-11-3).
- (4) Remove the Loading Gear Ass'y(S) and Slant Base Ass'y(S) from the pin "C" on the Loading Base Sub Ass'y.
- (5) Remove the Stopper Washer of Loading Gear Ass'y and disassemble the Slant Base Ass'y(S).
- (6) Remove the Loading Gear Ass'y(T) and Slant Base Ass'y(T) from the pin "B" on the Loading Base Sub Ass'y.
- (7) Remove the Stopper Washer of Loading Gear Ass'y(T) and disassemble the Slant Base Ass'y (T).
- (8) Remove the Stopper Washer from the pin "A" on the Loading Base Sub Ass'y and disassemble the Cam Gear.



### 11-2. Reassembly (Fig. 4-2-11-1, 4-2-11-2)

- (1) Apply the Oil 1/2 drop on the pin "A" of Loading Base Sub Ass'y. (Fig. 4-2-11-2)
- (2) Apply the Grease on the deviant lines of Cam Gear. (Fig. A)
- (3) Stick the Cam Gear in the pin "A" of Loading Base Sub Ass'y and then set the Stopper Washer.
- (4) Stick the Slant Base Ass'y(T) and the set the Stopper Washer.
- (5) Assemble the Cam Gear and Loading Gear Ass'y by going in gear together.

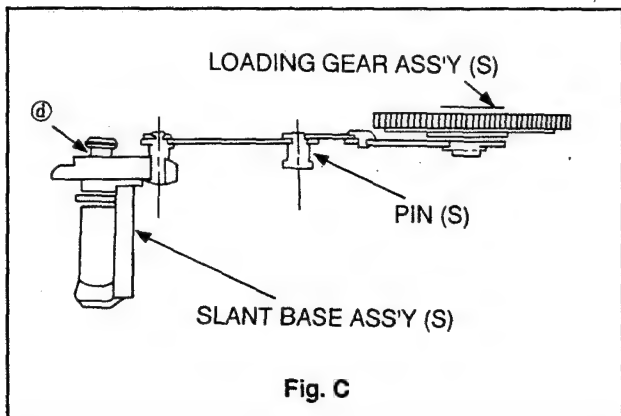
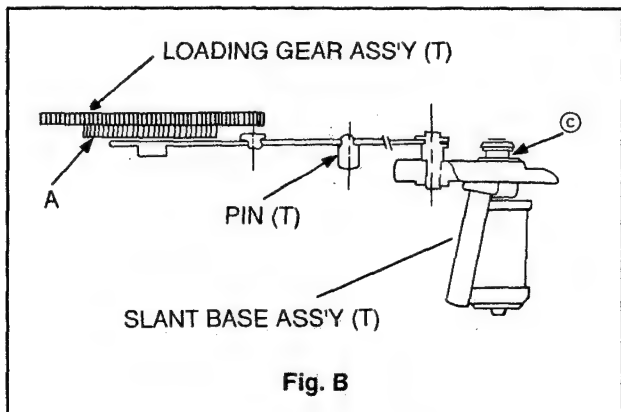
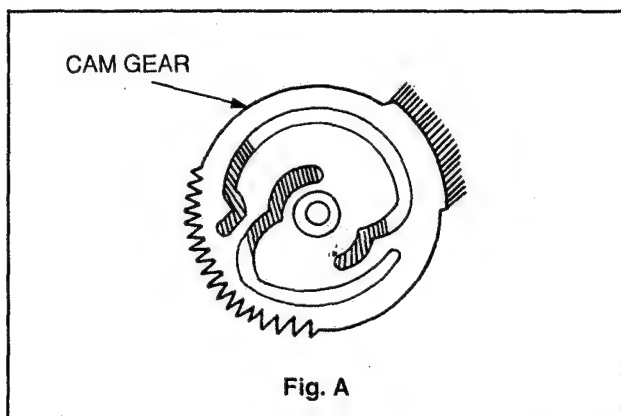


### (Assembly Method)

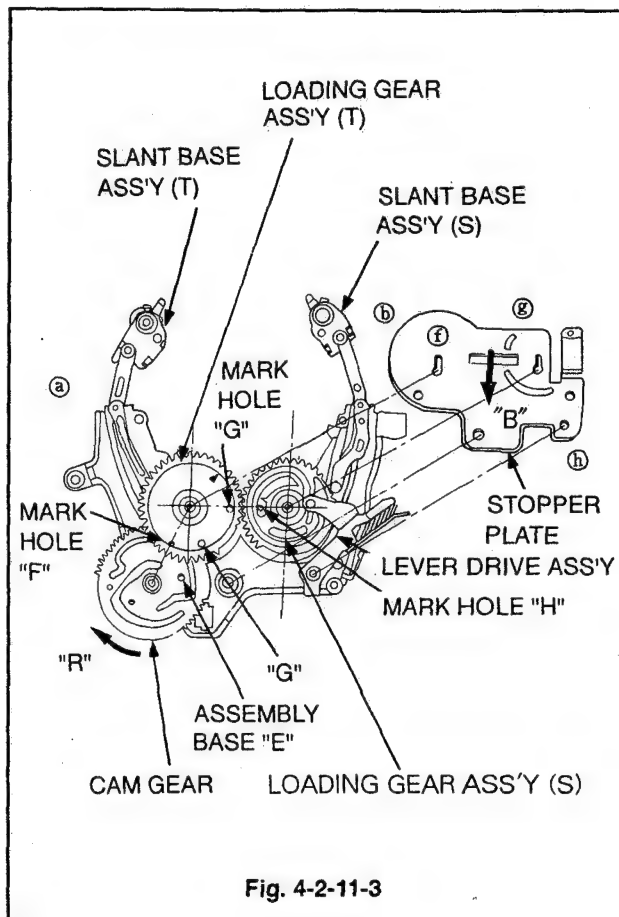
Apply the Oil 1/2 drop to the Pin "B". Accord the "assembly basic Hole", on the part unformed the teeth pattern by turning the Cam Gear, with the Guider Hole "E" formed on the Loading Base Sub Ass'y.

Fix the Loading Gear Ass'y(T) in the Pin "B". Accord the Guider Hole "F" in the center of cam Gear and Loading Cam Gear.

In the state, fix the little Gear(A) Teeth in the Cam Gear by pushing the Loading Gear Ass'y(T) from the Upside to the lower. (Fig. 2-11-3). And Check the Guider Hole "G" of Loading Gear Ass'y(T) is placed in the straight line between Pin "B" and Pin "C".



- (6) Stick the Pin "T" head of Loading Gear Ass'y(T) in the Guide Way "A" of Loading Base Sub Ass'y. (Fig. 4-2-11-3)
- (7) Stick the Slant Base Ass'y(S) in the Lever Hold of Loading Gear Ass'y(S) and Set the Stopper Washer. (Fig. 4-2-11-2)
- (8) Apply the Oil 1/2 drop in the Pin "C" of Loading Base Sub Ass'y. (Fig. 4-2-11-2). Go in gear the teeth of Loading Gear Ass'y(S) with the teeth of Loading Gear Ass'y(T).

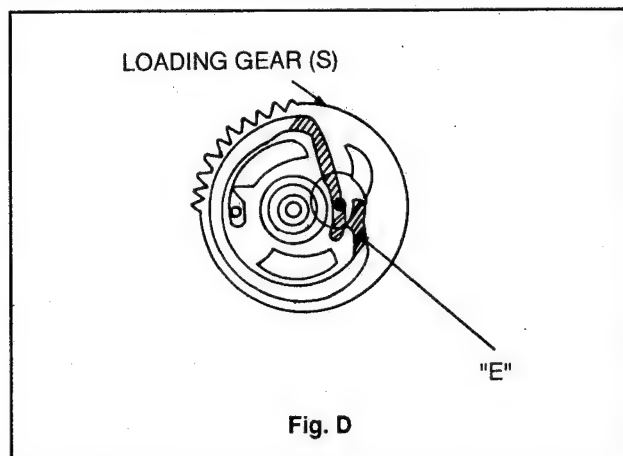


### (Assembly Method)

Fix the Loading Gear Ass'y(S) in the Pin "C" and check the Guide Hole "H" is placed in the straight line between Pin "B" and Pin "C". After Assembly, Pin "B", Guider Hole "G", Guider Hole "H" and Pin "C" are placed on the straight line. (Fig. 4-2-11-3)



- (9) Stick the Pin(S) Head of Loading Gear Ass'y(S) in the Guide Way "B" of Loading Base Sub Ass'y. (Fig. 4-2-11-3)
- (10) Rotate the Cam Gear to the direction of "R"  
Stick the part "C" of Slant Base Ass'y(T) and part "D" of Slant Base Ass'y(S) in the Guide Way "A" and "B" of Loading Base Sub Ass'y and then rotate the Cam Gear to the direction of "R" until the rotaty is stopped.
- (11) Apply the Grease on the deviant Lines of Cam trace formed on the Gear. (Fig. D)
- (12) Apply the Oil 1/2 drop in the Pin "D" of Loading Base Sub Ass'y. (Fig. 4-2-11-3)
- (13) During sticking the Lever Drive Ass'y in the Pin "D" of Loading Base Sub Ass'y, stick the Pin "L" of Lever Drive Ass'y in the inside of Cam trace on the Loading Gear(S). (Fig. D, part "E")
- (14) Apply the Grease on the deviant Lines of Lever Drive Ass'y. (Fig. 4-2-11-3)
- (15) Set the Stopper Plate
- (16) Turn the Loading Base Ass'y over, and apply the Grease to the deviant lines of the upper part on the Guide Way.



**(CHECKING) (Fig. 4-2-11-1)**

- Check the Vertical hem of Loading Gear Ass'y(T) negative mark "D" and Loading Gear Ass'y(S) positive mark " " are accorded with each other.
- Check the stopper Plate Guider Hole "I" and Loading Gear Ass'y(T) negative mark "G" are accorded with each other.
- During the checking, if the wrong result is found, adjust the steps above again.

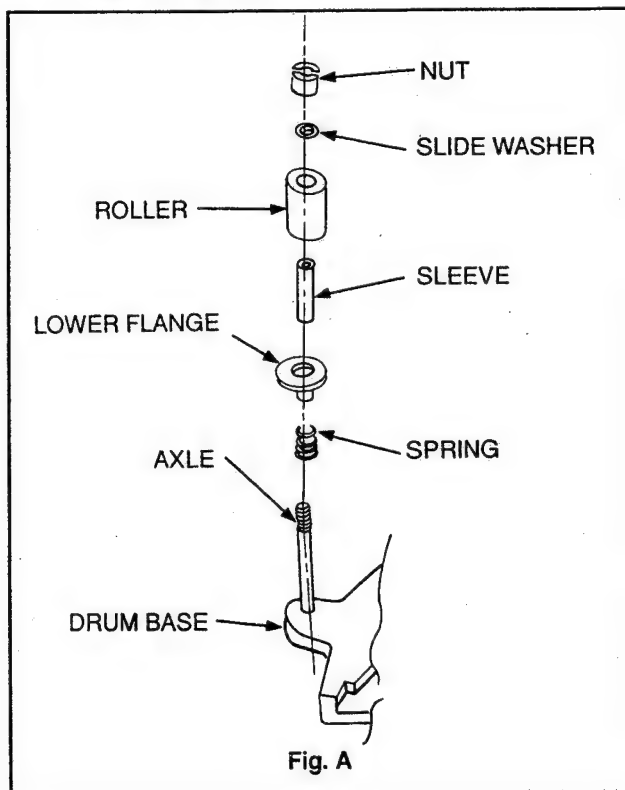
**NOTES :**

- During the Gears assembly, be careful of the Teeth of Gears get damaged by force.
- Do not force them umreasonably to disassembly and assembly.
- During the Slant and Base Ass'y(C), (T) disassembly and assembly, be careful of the obstruction adhere to the Roller and Post.

**12. DRUM BASE ASS'Y AND INERTIA ROLLER ASS'Y**

**12-1. Disassembly (Fig. 4-2-12) (Fig. A)**

- (1) Remove 3 Screws and ever remove Drum Base Ass'y.
- (2) Remove the Nut.
- (3) Remove the Slide Washer, Roller, Sleeve, Lower Flange and Spring.

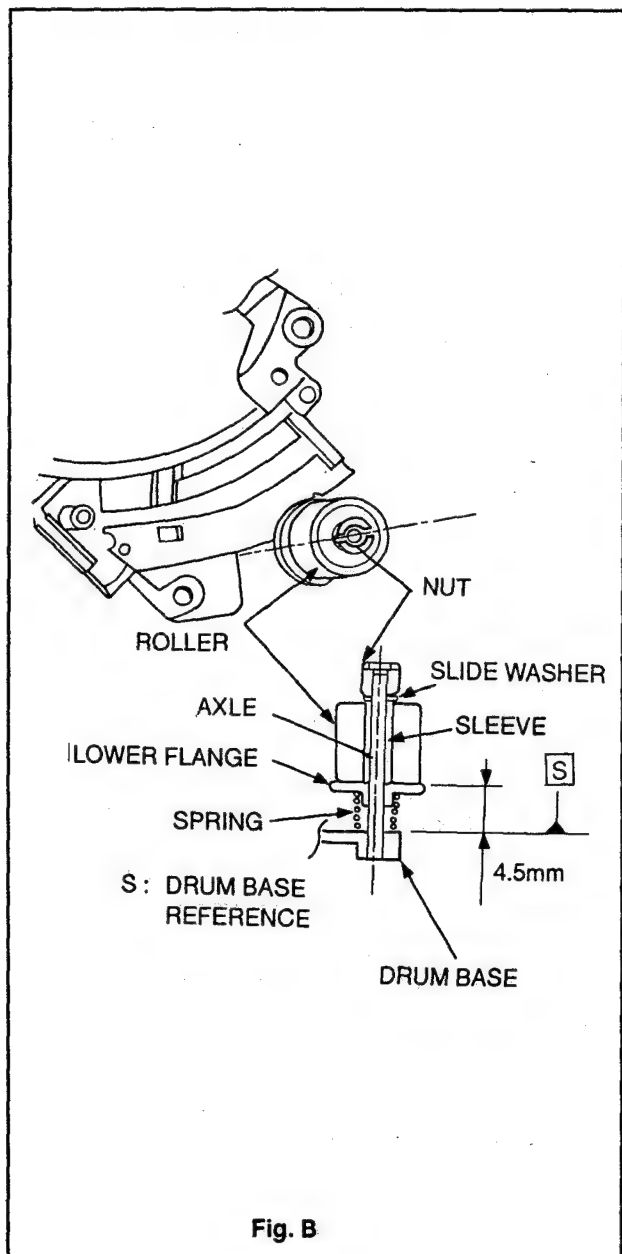


### 12-2. Reassembly (Fig. 4-2-12) (Fig. A)

- (1) Install the Spring, Lower Flange, Sleeve, Roller and Slide Washer on the Axle of Drum Base.
- (2) Fix the Axle by rotating the Nut four or six times.
- (3) Stick the Guide Bosses 2 point of Drum Base Ass'y in the Boss refuge Holes on the upper part of the Mechanism Chassis from above to below.
- (4) Set 3 Screws to fix the Drum Base Ass'y.

#### NOTES :

- Use the about 2kgf • cm Torque to set Screw.
- Be careful so the Roller surface is not to be dirted during disassembly and assembly.

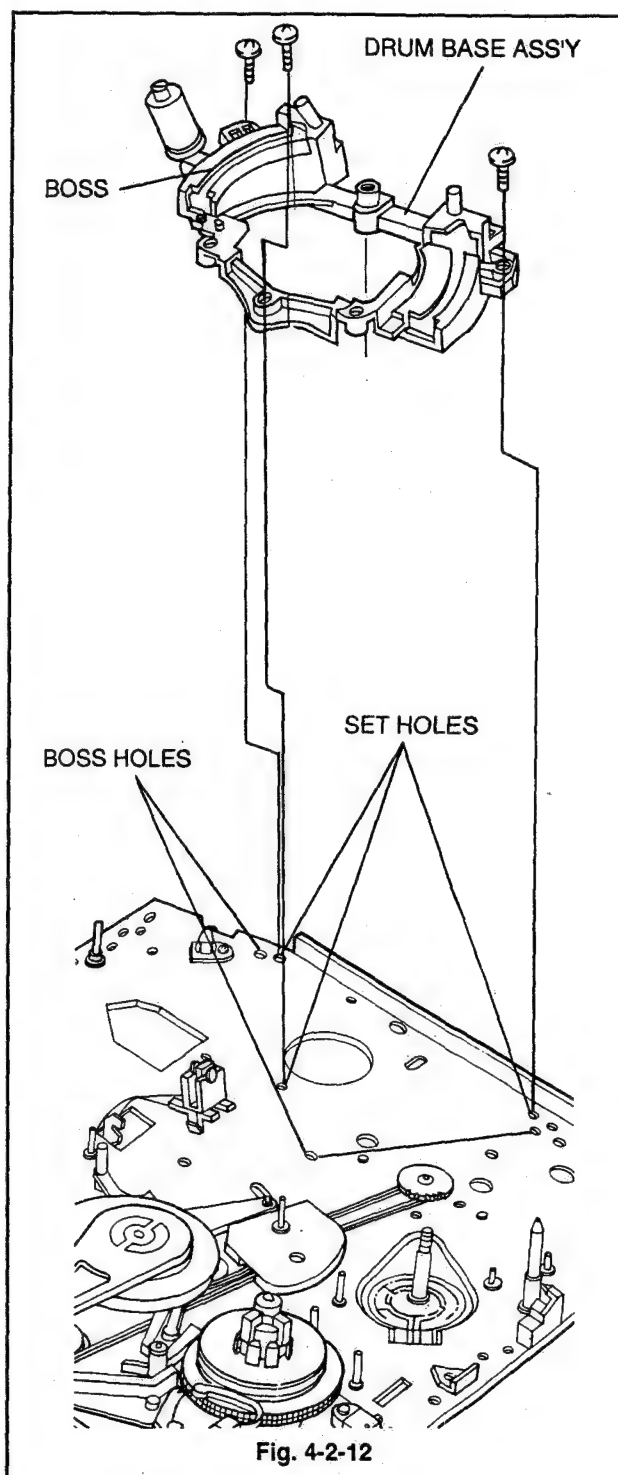


### 12-3. Roller Height Adjustment (Fig. B)

- (1) Adjust the height of Drum Base Lower Side and Lower Frange upper Side by rotating the Nut.

#### NOTE :

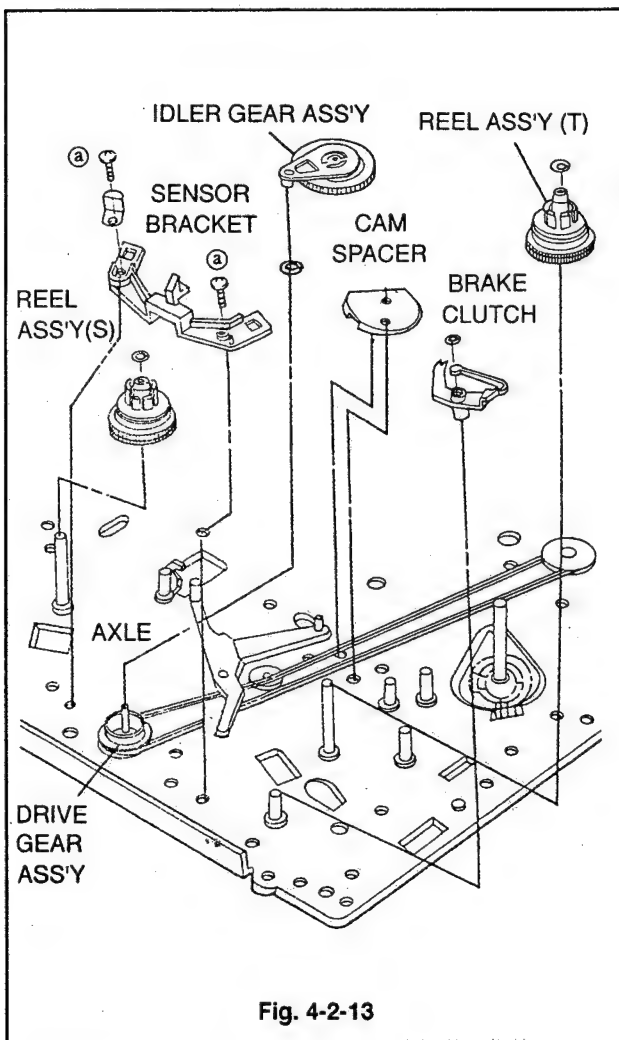
- Readjust the Tape Path after adjustment.



### 13. BRAKE CLUTCH, REEL ASS'Y(S), REEL ASS'Y(T), SENSOR BRACKET, IDLER GEAR ASS'Y AND CAM SPACER

#### 13-1. Disassembly (Fig. 4-2-13)

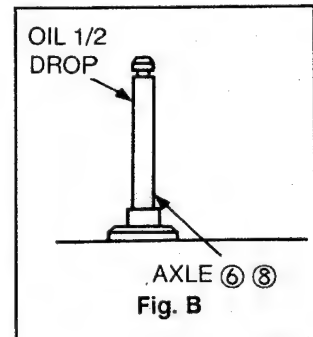
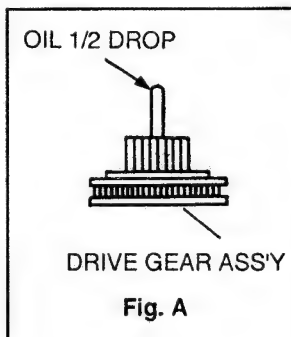
- (1) Remove the Stopper Washer and remove the Brake Clutch.
- (2) Remove the Stopper Washer and remove the Slide Washer after disassembly the Reel Ass'y (T).
- (3) Remove the Reel Ass'y(S) and then remove the Slide Washer.
- (4) Remove the Screw ① and Sensor Bracket.
- (5) Disassemble the Idler Gear Ass'y and remove Slide Washer.
- (6) Remove the Cam spacer.



#### 13-2. Reassembly (Fig. 4-2-13)

- (1) Stick the Guide Bosses 2 point of Cam Spacer in the Guider Bosses 2 point on the upper part of the Mechanism Chassis in the bottom of the Chassis by pushing from above to below.

- (2) Stick the Slide Washer on the Axle and then apply the Oil 1/2 drop and assemble the Idler Gear Ass'y on the Axle. (Fig. A). During assembling the Idler Gear Ass'y, go in gear the idler Gear teeth with Gear teeth on the upper part of Drive Gear Ass'y.
  - (3) Stick the Guide Boss 2 point of Sensor Bracket in the Guide Holes 2 point on the upper part of Mechanism Chassis and set right part with Screw.
  - (4) Push the Spring Arm ① of Brake Reel Ass'y to be supported to the side wall of Sensor Bracket.
  - (5) Stick the Slide Washer on the Axle and apply the Oil 1/2 drop to the Axle and assemble the Reel Ass'y (S). (Fig. B)
  - (6) Stick the Slide Washer on the Axle and apply the Oil 1/2 drop to the Axle and assemble the Reel Ass'y(T). (Fig. B)
- ⇒ Assemble the Reel Ass'y(T) carefully and go in gear the Brake Reel Ass'y teeth with Reel Ass'y (T) teeth by rotating the Lever Brake Ass'y to the direction of "R".
- (7) Set the Stopper Washer on the Axle.
  - (8) Set the Brake Clutch and then the Stopper Washer on the Axle.
- ⇒ Assemble the bow of Brake Clutch to be Supported to the Side wall of Reel Ass'y(T).



#### NOTES :

- Be careful so the bow of Brake Clutch is not to be transformed.
- Do not engage with the Gears by forces, because the Idler Gear is easy to get damaged during the Idler Gear Ass'y.
- Be careful so the teeth is not to get damaged during assembling the Brake Reel Ass'y and Reel Ass'y(T).
- Do not force the Spring Arm unreasonably during the disassembly and reassembly of Spring Arm on the Brake Reel Ass'y, it may cause the transformation of Spring.
- Use the about 1.2kgf • cm Torque to set Screw.

## 14. BRAKE REEL ASS'Y, LEVER BRAKE ASS'Y, TIMING BELT, IDLER BELT, DRIVE GEAR ASS'Y, CONVERSION GEAR ASS'Y

### 14-1. Disassembly (Fig. 4-2-14)

- (1) Remove the Stopper Washer and remove the Brake Reel Ass'y.
- (2) Remove the Timing Belt. Release the Timing Belt stuck in the Idler Belt and then remove the Timing Belt from the Drive Gear Ass'y.
- (3) Loosen the Stopper Washer, and remove the Idler Belt and Slide Washer.
- (4) Remove the Drive Gear Ass'y and Slide Washer on the Axle.
- (5) Loosen the Stopper Washer, and remove the Conversion Gear Ass'y and Slide Washer.

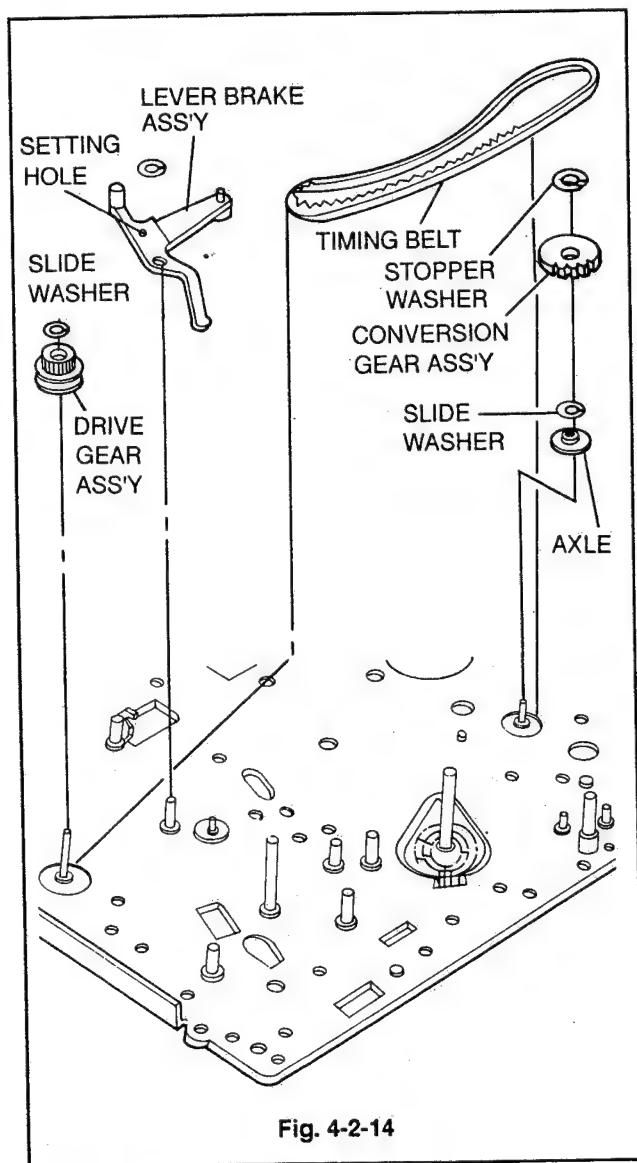


Fig. 4-2-14

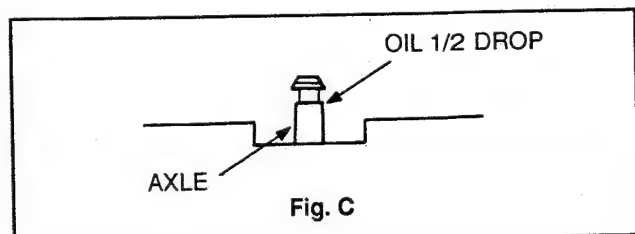
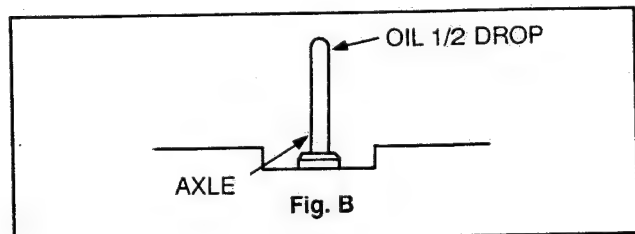
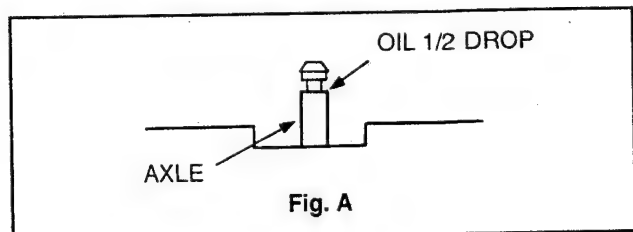
### 14-2. Reassembly (Fig. 4-2-14)

- (1) Stick the slide washer on the Axle and apply the oil 1/2 drop on the Axle. (Fig A)

- (2) Assemble the conversion Gear Ass'y on the Axle and set the stop washer.
- (3) Assemble the slide washer on the Axle and apply the oil 1/2 drop on the Axle. (Fig B)
- (4) Assemble the Drive Gear Ass'y on the Axle.
- (5) Stick the Idler Belt on the Axle and apply the oil 1/2 drop on the Axle.
- (6) Assemble the Idler Belt on the Axle and set the stopper washer.
- (7) Assemble the Timing Belt. Hook the Timing Belt on the lower Gear of Conversion Gear Ass'y and assemble the vertical port (no teeth part) on the lower teeth part of Drive Gear Ass'y by hooking on the vertical part of Idler Belt. (Fig. 4-2-13) Apply the oil on the teeth of Timing Belt.
- (8) Assemble the Lever Brake Ass'y on the Axle and set the stopper washer, and then fit the Guider Hole to the cognition hole by rotating the Lever Brake Ass'y.
- (9) Stick the Lever Brake, on the Axle and set the Stopper Washer, At this time, assemble so the part "B" on the Lever Brake Ass'y is to be inserted in the Mouth part "A" on the Brake Reel Ass'y. (Fig. 4-2-13)

#### NOTE :

Do not force to be transformed unreasonably during the Timing Belt disassembly/assembly.



## 15. DRUM ASS'Y DISASSEMBLY

### 15-1. Disassembly

- (1) Set the Unit to the ULC Mode (Unloading mode).
- (2) Remove the Flexible Board and connector.
- (3) Loosen the 3 screws on the Lower part of Chassis and remove the Drum Ass'y from the Drum Base Ass'y.

### 15-2. Reassembly

- (1) Fit 2 Guider Bosses formed on the Drum Base Ass'y with the Guider refuge Holde on the Lower part of Drum Ass'y, and then set the Drum Ass'y with 3 screws through the Guide Hole of Drum Base Ass'y on the Lower Part of chassis.
- (2) Link the connector to the Flexible Board.

### NOTES :

- During the Flexible Board and connector disassembly/assembly, be careful to the Line Cutting or transformation.
- Do not touch the Head Tip.
- Readjust the Tape path of ter assembly.
- Use the about 2kgf • cm Torque to set screw.

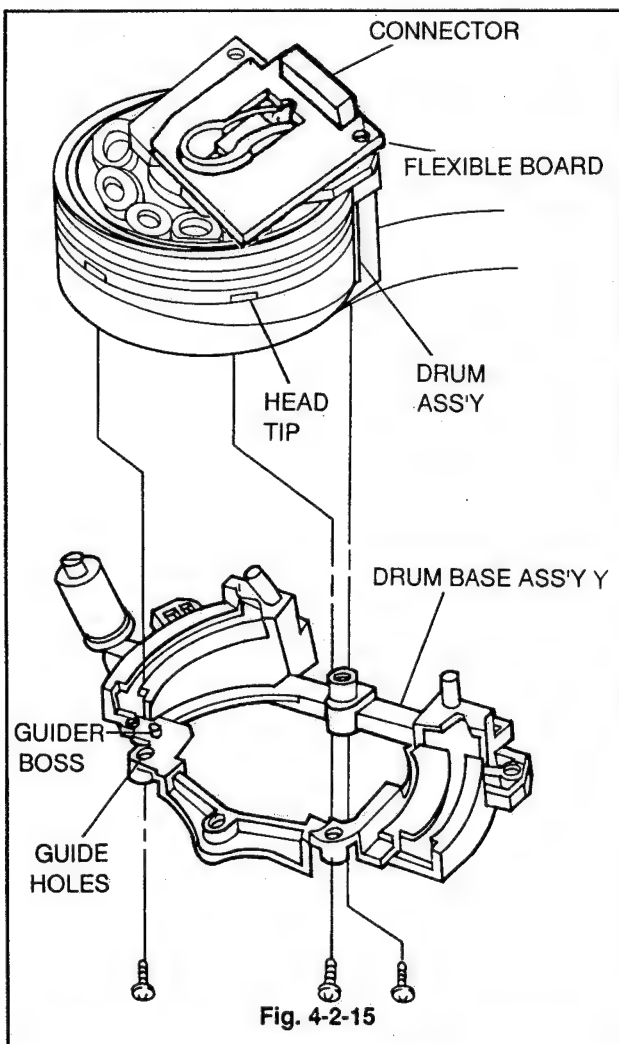


Fig. 4-2-15

## 16. DRUM DISASSEMBLY

### 16-1. Disassembly

- (1) Loosen 2 Screws on the upper part of Drum Ass'y and remove the Motor Ass'y stator.
- (2) Remove the lead from the soldering part on the Lower part of Drum Ass'y, and remove the Plate Signal by loosening 1 Screw.
- (3) Remove the lead from the PWB Ass'y signal soldering part on the Lower part of Drum Ass'y and remove PWB Ass'y signal.

### 16-2. Reassembly

- (1) Assemble the Drum to fit the PWB Ass'y signal Hole and the Drum Sub Ass'y pin properly, and solder on the soldering part of PWB Ass'y signal.
- (2) Assemble the Plate Signal Ground on the Drum Sub Ass'y with 1 screw, an then Solder on the soldery part of Plate signal Ground.
- (3) Assemble the Motor Ass'y Stator in the Bracket Stator Hole with 2 screws on the upper part of Drum Sub Ass'y.

### NOTES :

- During the parts assembly, do not scratch on the surface of Drum.
- Be careful so the Video Head is not to be damaged.
- Solder carefully after assembling the PWB Ass'y Signal.
- Use the about 2kgf • cm Torque to set screw.

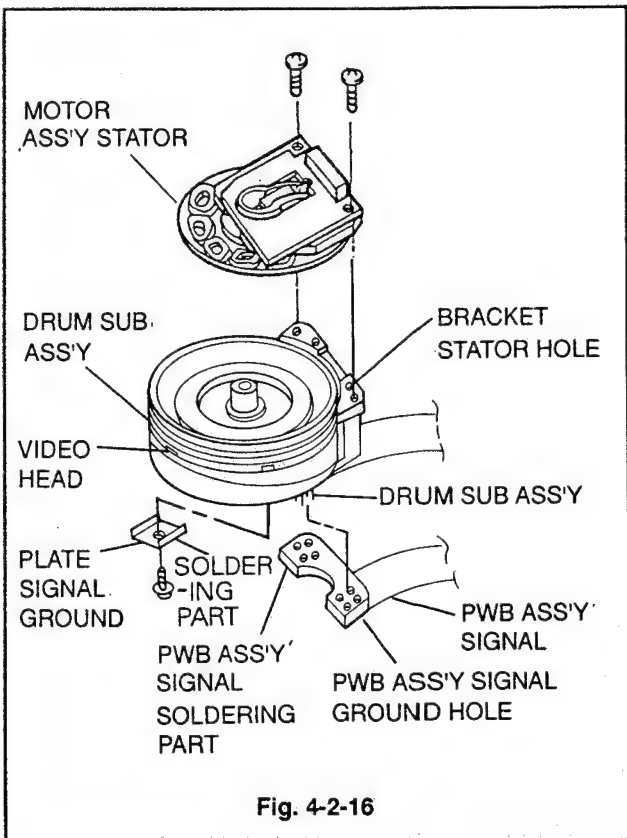


Fig. 4-2-16



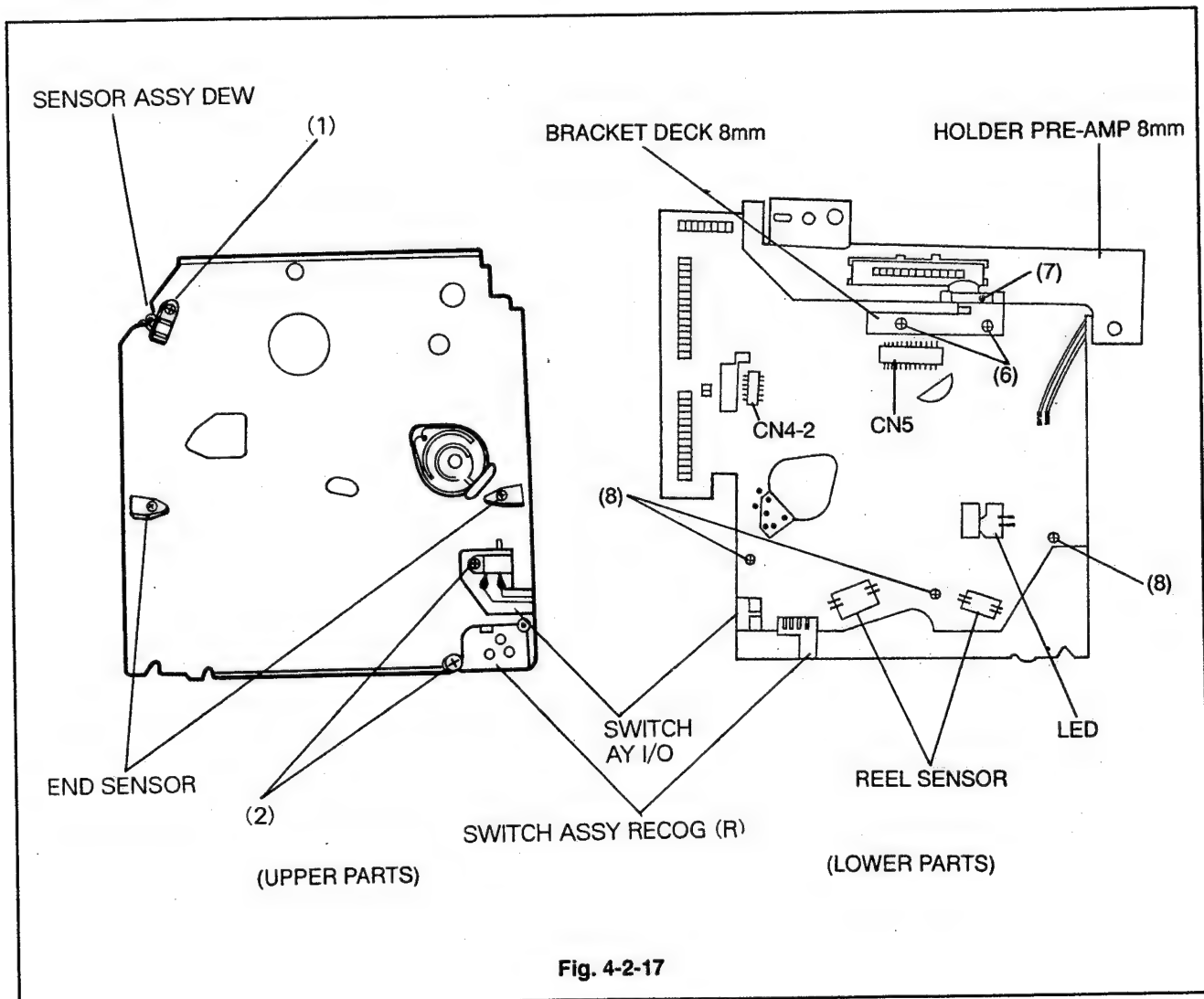
## 17. PCB ASS'Y DECK

### 17-1. Disassembly

- (1) Remove 1 screw (4) and 1 screws (5) on the upper parts of chassis.
- (2) Remove the Holder PRE-AMP 8 mm, BRACKET DECK 8mm after release, screw (6) and screw (7).
- (3) Remove 3 screw (8) and remove the solder of Mode switch, LED.
- (4) Remove the PCB ASS'Y DECK JUNCTION.

### 17-2. Reassembly

Perform the reassembly to the reverse order of assembly above.



# DECK MECHANISM ADJUSTMENT

## 1. DECK LOADING SYSTEM LAY-OUT

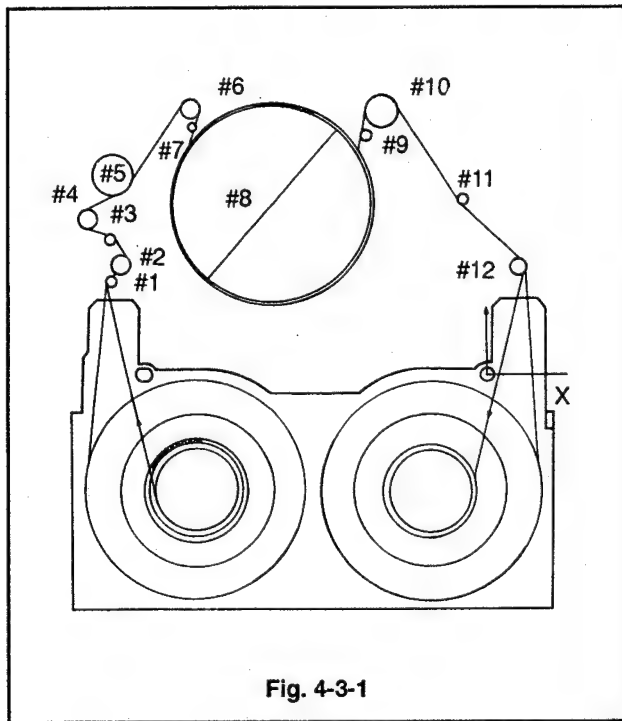


Fig. 4-3-1

- #1 : TENSION POST ( $\phi 2$ )
- #2 : GUIDE ROLLER (N) ( $\phi 4$ )
- #3 : SLANT POST ( $\phi 2$ )
- #4 : GUIDE ROLLER ( $\phi 4$ )
- #5 : INERTIA ROLLER (=P1) ( $\phi 8$ )
- #6 : GUIDE ROLLER (S) (=P2) ( $\phi 4$ )
- #7 : SLANT POST (S) ( $\phi 2$ )
- #8 : DRUM ( $\phi 40$ )
- #9 : SLANT POST (T) ( $\phi 2$ )
- #10 : GUIDE ROLLER (T) (=P3) ( $\phi 6$ )
- #11 : CAPSTAN ( $\phi 1.995$ )
- #12 : TAKE UP GUIDE (=P4) ( $\phi 3$ )

## 2. PREPARATIONS

- ① Cleaning water.
- ② Chamois cloth.
- ③ Cotton stick
- ④ Dental mirror.
- ⑤ Torque CST Tape, Alignment Tape and PLAY/RECORDING Tape.
- ⑥ Hexagonal Wrench(0.89mm) or L-Wrench.
- ⑦ Small(-) Driver⇒P1, P4 Adjustment.
- ⑧ Loading adjustment stick⇒P2, P3, P4 adjustment.
- ⑨ Circuit jig for Deck adjustment.

## 3. LOADING POST FIRST HEIGHT ADJUSTMENT

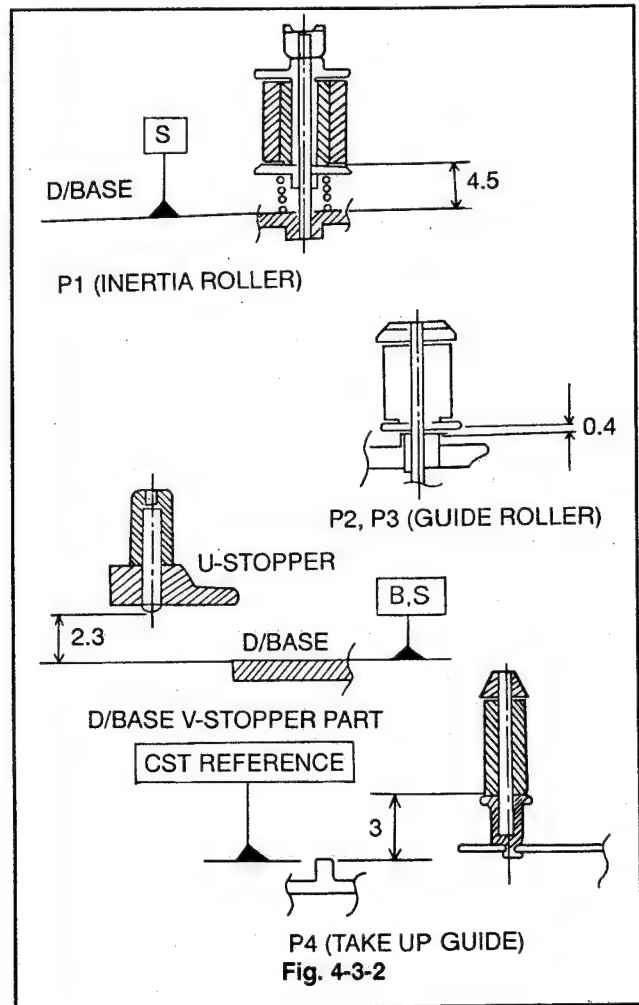
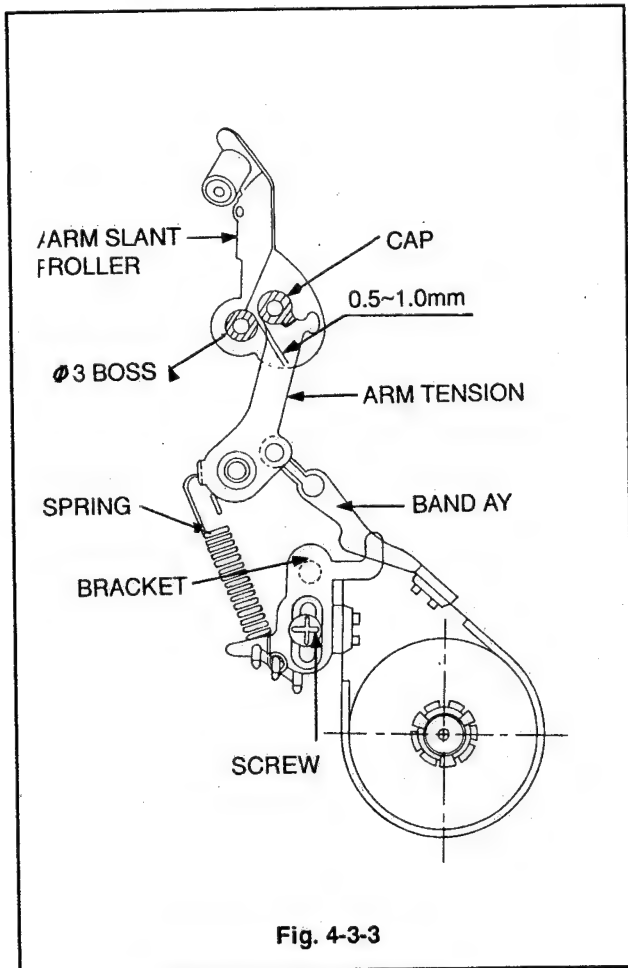


Fig. 4-3-2

## 4. TENSION ARM POSITION AND BACK TENSION ADJUSTMENT

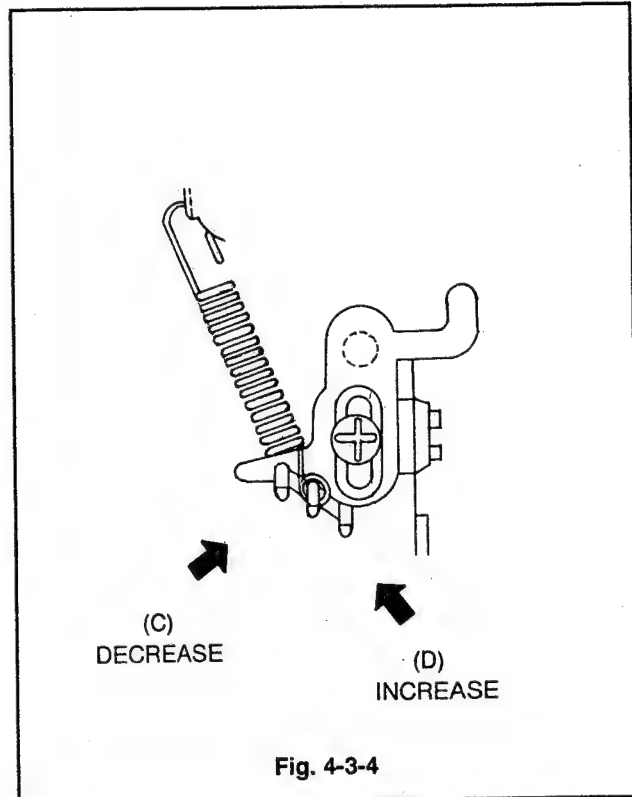
### 4-1. Tension Arm position Adjustment

- (1) Set the Deck mechanism to the Ope-Mode in No Tape state  $\Rightarrow$  using the Circuit Fixture.
- (2) Check the gap between  $\varnothing 3$  Boss of Arm Slant Roller and Cap of Arm Tension is 0.5~1.0 mm. If the gap is over the range, adjust as follows.
- (3) Remove the screw on the Bracket fixing the Band Ass'y.
- (4) Set the Bracket to the desired position by pushing to the direction of A or B and then set the screw.



### 4-2. Back Tension Adjustment

- (1) After step 4-1 Adjustment, insert the Torque CST Tape in the Unit and set to the Ope-Mode.
- (2) Check the Back Tension Torque of Supply side is in  $6.5 \pm 2$  (gf-cm).
- (3) If the measuring value is more than the range, hook the spring of Bracket to (c), and if the value is less than hook to (D).
- (4) Check the Back Tension is in the range by performing the Step 1) and 2) repeatedly.



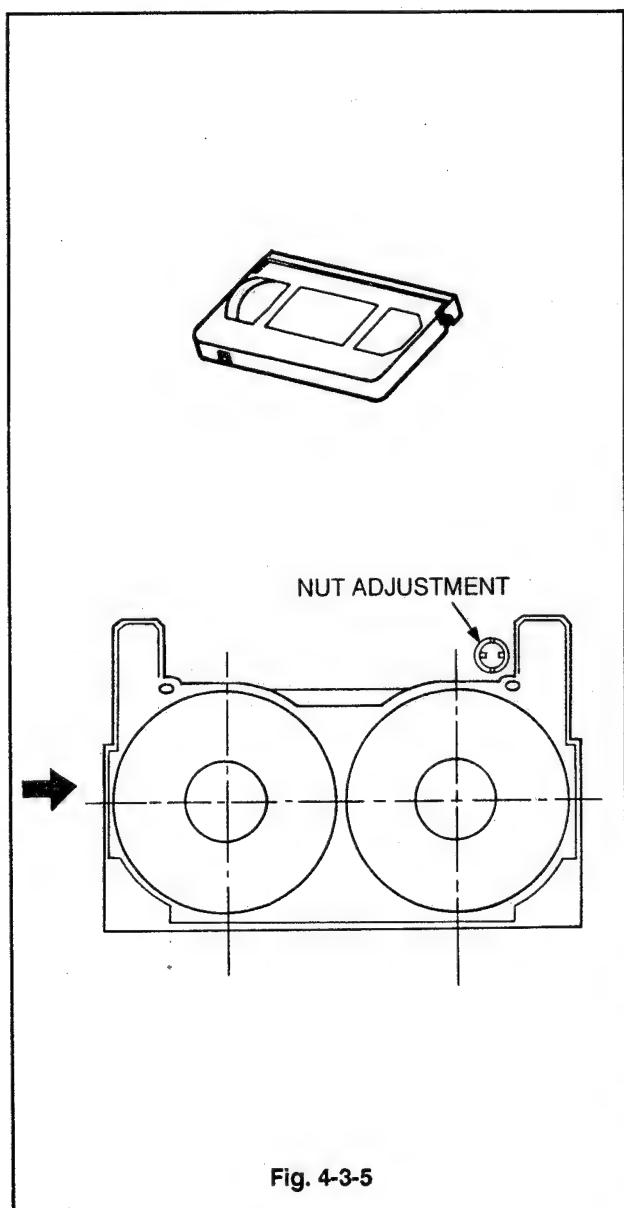
## 1-5. REEL TORQUE CHECK

Insert the Torque CST Tape in the unit and check the spec as follows;

MODE	UNIT	SPEC	REMARKS
OPC CUE	gr · cm	$12.5 \pm 4$	At T/up Reel
REVERSE		$35 \pm 6$	At Supply Reel
REVIEW		$12.5 \pm 4$	At T/up Reel

## 6. TAPE PATH ADJUSTMENT

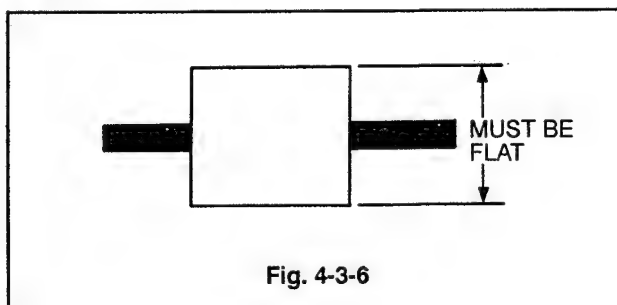
The 8mm Video can control the Tape speed instantaneously using the pilot signal, and adjust very correctly using the ATF(Automatic Track Finding) method, so the adjustment by Tracking control knob is not need. But in case of ATF method, the Tape Path adjustment is difficult. That is, the perfect adjustment is difficult through the ATF method, because it compensates the Head Tracking Error to extent. Therefore, select the Track shift Mode for is possible and the Tracking control is easy. NOTE for P4 Guide (#12).



### 6-1. Adjustment preparation

- (1) Wipe the Tape path. (Tape Guides, Drum, Capstan Shaft, Pinch Roller)
- (2) Set the oscilloscope for the Waveform Output.
- (3) Play Back the alignment Tape for Tracking control.
- (4) Check the RF Waveform of Oscilloscope in the Entrance/Exit is flat Otherwise, adjust as follows;

#### • WAVEFORM



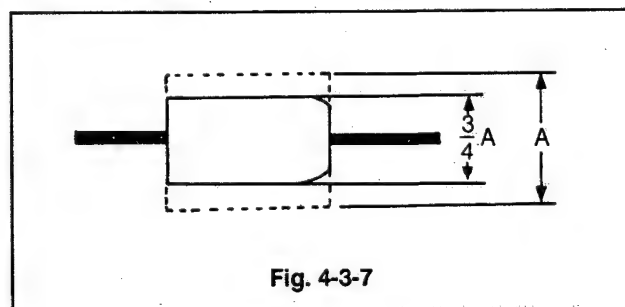
### 6-2. Tracking Control

- (1) Playback the Alignment Tape for Tracking control.
- (2) Using the Running Control stick, rotate the P2-Guide so the waveform of entrance side is to be flattened.
- (3) Using the Running control stick, rotate the P3-Guide so the waveform of exit side is to be flattened.

### 6-3. Tracking Fine Adjustment

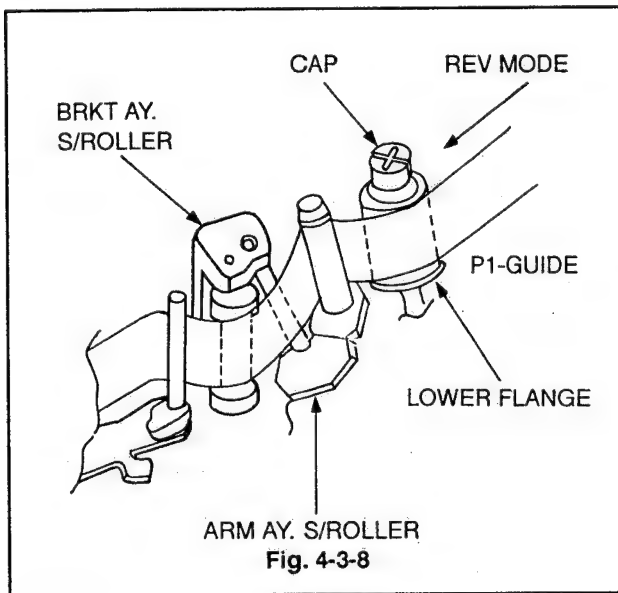
- (1) Playback the Alignment Tape for Tracking control and set the unit to the Track shift mode.
- (2) Check the waveform is flat. Otherwise, rotate the P2-Guide and P3-Guide so it is to be flattened.
- (3) Set the Lock screw of P2 side using the Hexaponal Wrench 4 L-Wrench, etc. At this time, check the entrance of waveform is not change.
- (4) Set the Lock Screw in the P3 side using the hexaponal Wrench 4 L-Wrench, etc. At this time, check the exit side of waveform is not changed.

#### • WAVEFORM



#### 6-4. P1-Guide (Inertia Roller) Adjustment

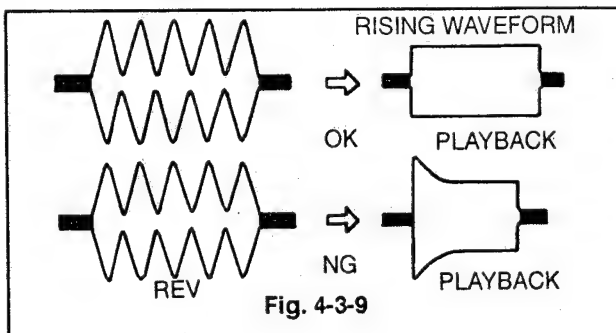
- (1) Playback the P6-120MP Tape, and then set the unit to REV Mode.
- (2) Check the distortion is occurred in the Lower Flange of P1-Guide. If it appears, bring the Cap of P1-Guide a lower by rotating it to the clockwise with the driver until the tape is flatted.
- (3) Playback the Alignment tape for the Tracking control.
- (4) Perform the Tracking Control and Tracking Fine Control.
- (5) In the Track Shift state, playback the tape again after CUE/REV. At this time, check the RF Waveform is stabled horizontality in 2secs.
- (6) If not, rotate the cap of P1-Guide to an angle of 90 degrees of counter-clockwise and then perform step 5 again.



#### NOTES :

- ① Repeat Step(5),(6) until the normal waveform ranged is become. At this time, if the RF waveform is changed, perform the Track Fine adjustment of Entrance side and then repeat step(5) again.
- ② During FF/REW Mode, check the Curl or Tape Jam are occurred on the #4 Guide Roller Upper/Lower Flange of Bracket AY, S/Roller.

#### • WAVEFORM

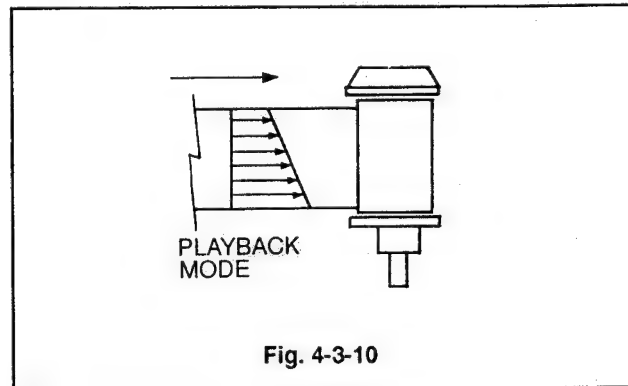


#### 6-5. P4-Guide(T/Up Guide) Adjustment

- (1) Playback the Alignment Tape for Tracking control and set the unit to the REV-Mode.
- (2) Check the Tape transformation is not occurred between the P3-Guide and Capstan Shaft. If it occurs, rotate the P4-Guide Height Adjustment Cap until the Tape transformation is ridded.
- (3) Set the unit to the playback Mode, and then check the Tape transformation is not occurred between the Capstan shaft and P4-Guide(within 0.5mm) If the Tape transformation is more than 0.4mm, adjust the P4-Guide Height until it is become within 0.5mm.

#### NOTES :

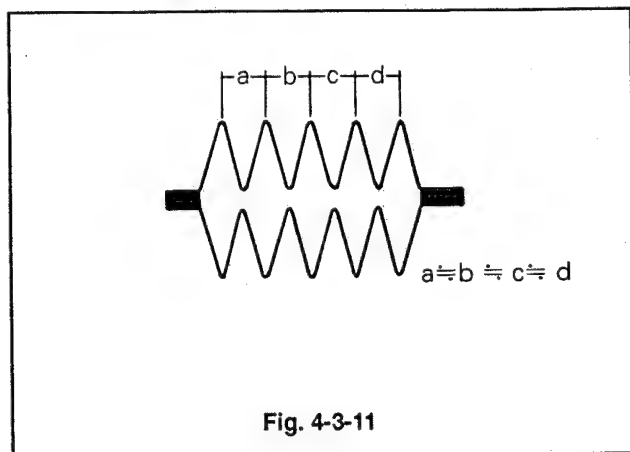
- When the unit is set to the REV\*Mode. it is good adjustment that the transformation between P3-Guide and Capstan Shaft is appeared within 0.3mm.
- The Upper/Lower Tape Tension distribution in the P2,P3-Guide must be as follows;



#### 6-6. CUE/REV Waveform check

- (1) Playback the Alignment Tape for Tracking control and then set the unit to the REV Mode. Check the top of each waveform is sustained with the regular width of 5 or more than 5. Otherwise, perform Item 6-3.
- (2) Set the unit to the CUE-Mode. Check otherwise, perform Item 6-3.

#### • WAVEFORM



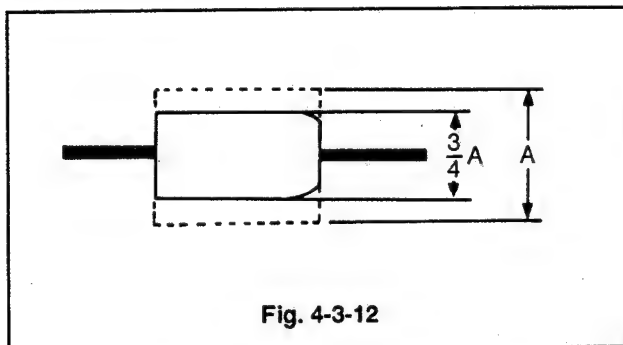


## 6-7. Check after Adjustment

### (1) Tracking Check

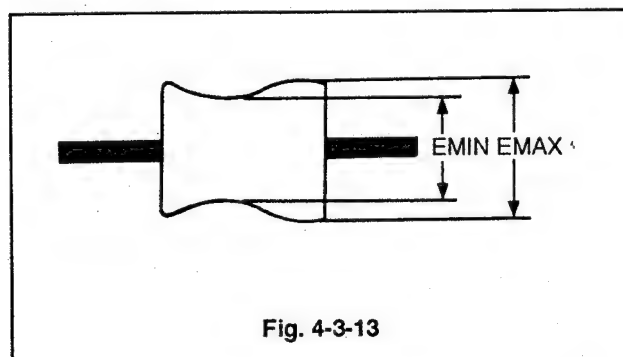
- 1) Check the width of RF Waveform is reduced to about 3/4 when do the unit set to the Track Shift position.

#### • WAVEFORM



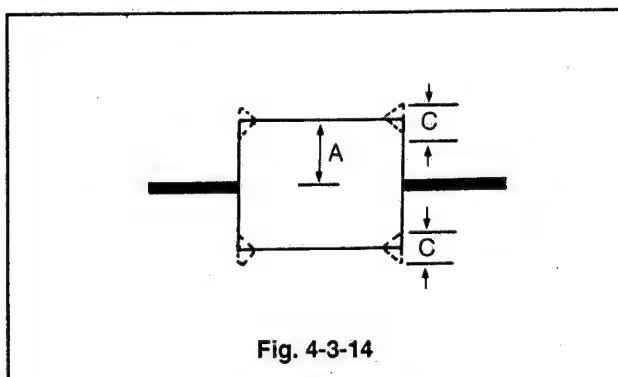
- 2) Check the Minimum width (Emin) is the 65% of Maximum Width (Emax) or more than 65%.

#### • WAVEFORM

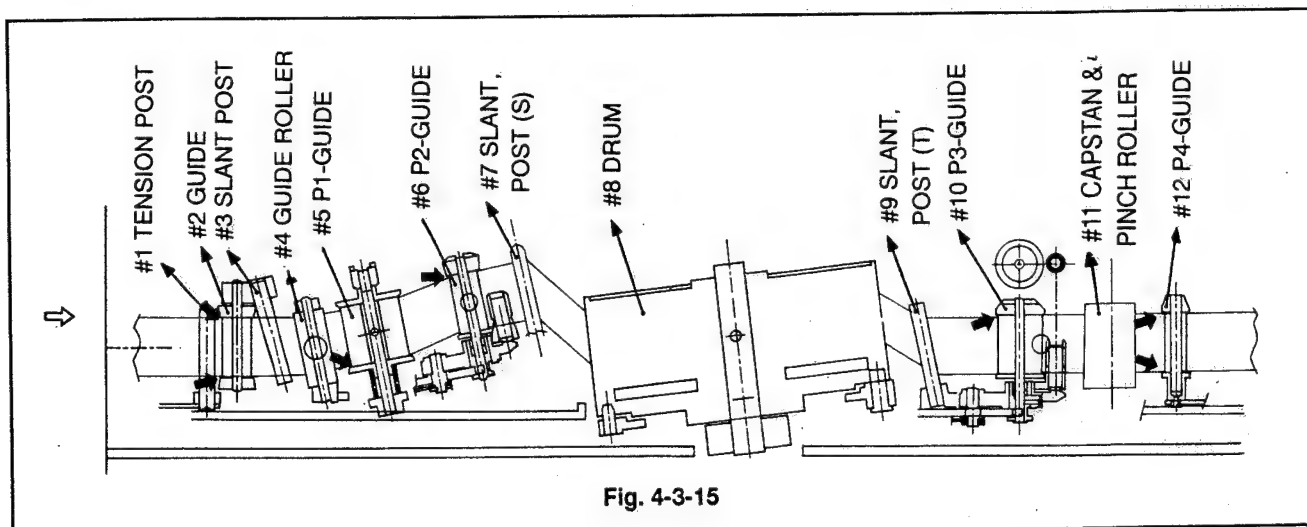


- 3) Check the Waveform is not changed greatly.
- (2) Rising Check
  - 1) Playback an Alignment Tape for Tracking Control.

#### • WAVEFORM



- 2) Release the Tracking Shift State.
- 3) Unload the tape and load again.
- 4) Set the Unit to the PLAY mode and check the RF Waveform is stabilized within 2 Secs, horizontally, Also, check the tape is distorted around the Pinch Roller.
- 5) Set the Unit to the CUE/REV and FF/REW modes and then playing back again, check the RF Waveform is stabilized within 2 Secs, horizontally, Also, check the tape is distorted around the Pinch Roller.
- 6) Check the process from 3) to 5) repeatedly.
- (3) TAPE PATH Adjustment
  - 1) Playback the P<sub>6</sub>-120MP (NTSC) or P<sub>5</sub>-90MP (PAL) Cassette Tape.  
Check the Tape gets on or the Tape folded state is within 0.3mm in the following flanges;
    - ① Upper and Lower Flange of #2 Guide.
    - ② Lower Flange of #5 P1-Guide
    - ③ Upper Flange of #6 P2-Guide
    - ④ Upper Flange of #10 P3-Guide
    - ⑤ Upper and Lower Flange of #12 P4-Guide
  - 2) During Playback Mode, press the FF key to set CUE Mode or press the REW key to set REV Mode, and at this time, check the Tape gets on or the Tape folded state is within 0.3mm in the following flages.



# SECTION 5 REPLACEMENT PARTS LIST

## 1. Mechanical Section

### 1-1. VHS Mechanism

RUN DATE : 95.09.26

NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
ASSEMBLY PARTS SECTION						
		A00	412-127C	DECK	ASSY D-17'S (7HD SI VCR PAL)	NSP NSP
OR		A00	412C127C	DECK	ASSY D-17'S (7HD SI VCR PAL)	
OR		A00	412G127C	DECK	ASSY D-17'S (7HD SI VCR PAL)	
OR		A00	412H127C	DECK	ASSY D-17'S (7HD SI VCR PAL)	
OR		A00	412W127C	DECK	ASSY D-17'S (7HD SI VCR PAL)	
		A01	413-184D	DRUM	ASSY (D17-7CH PAL) DD2	
		A02	386-296C	ARM	ASSY CL	
OR		A03	311-005G	CHASSIS ASSY'	D17	
		A03	311-005M	CHASSIS ASSY'	D17	
		A04	456-048A	REEL	ASSY SUPPLY POM 7G	
		A05	456-045A	REEL	ASSY T/UP POM 7G	
		A06	321-397D	BRACKET	ASSY F/R	
		A07	225-228A	BASE	ASSY A/C	
OR		A08	225-248A	BASE	ASSY,P2	
		A08	225-248B	BASE	ASSY P2 (W-W)	
OR		A09	225-249A	BASE	ASSY,P3	
		A09	225-249B	BASE	ASSY P3 (W-W)	
		A10	414-104A	MOTOR	ASSY LOAD	
		A11	333-209E	LEVER	ASSY PINCH	
		A20	321-401A	BRACKET	ASSY BOTTOM	
		A21	333-208A	LEVER	ASSY RAT	
		A22	338-078A	BRAKE	ASSY CAP	
		A23	386-218A	ARM	ASSY LOAD(R)	
		A24	386-219A	ARM	ASSY LOAD(L)	
		A25	511-997D	PWB ASSY!	D-17,VCR	
OR		A30	219-017F	HOUSING	ASSY (D17)	
		A30	219-017L	HOUSING	ASSY (D17)	
		A32	435-257B	GEAR	ASSY DRIVE (HOOK ADDED)	
		A33	321-406A	BRACKET	ASSY CARRIER	
		A34	321-441A	BRACKET	ASSY SIDE	
		A35	515-106B	PWB ASSY!	SENSOR	
PARTS SECTION						
		001	413-182D	DRUM	ASSY UPPER (D-17 7CH PAL)	NSP NSP NSP
		002	413-183A	DRUM	ASSY LOWER (7CH)	
		005	225-231B	BASE	ASSY D-BRUSH	
OR		006	225-220A	BASE	DRUM	
OR		006	225-220C	BASE	DRUM (Y-H)	
		006	225-296A	BASE	ASSY DRUM (HI-FI)	
		007	386-297A	ARM	SUB ASSY CU	
		008	442-460B	SPRING	CU	
		010	386-295B	ARM	CL	
		012	384-071A	GUIDE	17	
		013	523-082B	HEAD	FE,HVHF0010AK	
OR		013	523-824A	HEAD	F.E MH-131G (D-17)	
		014	378-017A	SLEEVE	P1	
		015	434-178A	ROLLER	P1	
OR		015	434-178B	ROLLER	P1	

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		016	389-003B	ADJUST	P(4)	
		017	434-244A	ROLLER	ASSY INERTIA	NSP
		018	386-205A	ARM	ASSY TENSION	
		019	442-331C	SPRING	TENSION	
		020	328-052B	BAND	ASSY TENSION	
		021	334-066A	STOPPER	P1	
		027	435-243A	GEAR	IDLE A POM 3G	
		028	435-244A	GEAR	IDLE B POM 3G	
		029	456-040A	REEL	T17	NSP
		030	442-341A	SPRING	REEL	NSP
		031	276-068A	CAP	REEL	NSP
		032	456-039A	REEL	S17	NSP
		036	435-240A	GEAR	F/R POM 3G	
		037	442-336A	SPRING	UP/D	NSP
		038	435-239A	GEAR	UP/D POM 3G	NSP
		040	333-201B	LEVER	ASSY F/R	NSP
		044	442-338B	SPRING	SSB	NSP
		045	338-081A	BRAKE	S-SOFT	NSP
		046	442-337A	SPRING	SMB	NSP
		047	338-080A	BRAKE	ASSY S-MAIN	NSP
		048	442-339D	SPRING	TSB	NSP
		049	338-083A	BRAKE	ASSY T-SOFT	NSP
		050	321-396A	BRACKET	SUB ASSY F/R	NSP
		054	389-013A	ADJUST	X-ASSY	
		056	378-018A	SLEEVE	P4	
		060	442-343A	SPRING	T/UP	
		061	386-387B	ARM	ASSY T/UP	
		065	442-332A	SPRING	A/C	
		066	225-219A	BASE	SUB ASSY A/C	NSP
		068	523-089A	HEAD	SUB ASSY A/C	
		069	442-362A	SPRING	AZIMUTH	
		070	338-085A	BRAKE	ASSY T-MAIN	
		071	442-344A	SPRING	TMB	
		074	434-173A	ROLLER	ASSY GUIDE	
	OR	074	434-173C	ROLLER	ASSY GUIDE	
		075	353-054B	SCREW	MINIATURE	
		076	225-226B	BASE	SUB ASSY SLALT (L,W-W)	
		077	225-225B	BASE	SUB ASSY SLALT (R,W-W)	
		081	414-105A	MOTOR	SUB ASSY,L	
		082	437-009A	WORM	ASSY	
		083	321-410A	BRACKET	SUB ASSY L/M	
		084	433-023A	WHEEL	WORM	
		087	321-470A	BRACKET	ASSY DEW	
		088	435-448A	GEAR	PINCH (N)	
		090	442-347A	SPRING	PINCH	NSP
		091	386-210A	ARM	ASSY PINCH	NSP
		092	442-346A	SPRING	STOPPER	NSP
		093	334-050C	STOPPER	PINCH	NSP
	OR	094	434-181A	ROLLER	ASSY PINCH	
		094	434-181B	ROLLER	PINCH D14 X L18	
		095	276-089B	CAP	PINCH	NSP
		096	333-203A	LEVER	PINCH	NSP
		098	333-344A	LEVER	T-UP (N)	
		100	321-463A	BRACKET	SUB ASSY B	NSP
		102	435-249A	GEAR	RAT1	NSP

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		103	442-356A	SPRING	F-LEVER	NSP
		104	356-208A	PIN	F-LEVER	NSP
		106	442-345A	SPRING	RAT	NSP
		107	333-202A	LEVER	RAT	NSP
		108	333-207A	LEVER	F17	NSP
		110	374-005A	CAM	D17 POM 10G	
		111	435-318A	GEAR	ASSY RACK F/L	
		112	435-291A	GEAR	ASSY RACK T	
		113	435-246A	GEAR	PC POM 3G	
		114	414-121B	MOTOR	CAPSTAN, GVC017S	
		115	452-047A	BELT	CENTER D71.9 X SQRT2.0	
		116	256-734A	PLATE	F17	
		117	442-342B	SPRING	FP	
		120	338-089A	BRAKE	SUB ASSY CAP	
		121	442-333A	SPRING	CAPSTAN	
		122	432-038A	PULLEY	GEAR POM 3G	
		130	337-005A	CLUTCH	ASSY POM 7G FELT 20X1X1T 2EA	
		131	340-001A	HOLDER	LED (Q)	
		132	324-642A	HOLDER	R/S	
		133	513-494D	PWB	JUNCTION D-17 VCR	NSP
		134	556-133A	SWITCH	MODE	
	OR	134	556-133B	SWITCH	MODE, ALPS	
	OR	135	ODL451000AA	DIODE LED	IR SENSOR GL451(LONG) SHARP	
		135	ODL550000AB	DIODE LED	IR SENSOR EL-55L(LONG) KOC	
		136	657-102K	SENSOR	SG-105(REEL) D-16 KOC	
		137	556-131A	SWITCH	ESE-105SV1	
		138	435-234A	GEAR	LOAD(R)	
		139	442-330A	SPRING	LOADING	
		140	386-274A	ARM	SUB ASSY (R)	
		142	435-235A	GEAR	LOAD(L)	
		143	442-330B	SPRING	LOADING	
		144	386-273A	ARM	SUB ASSY (L)	
		146	333-218A	LEVER	ASSY A-TEN	
		150	321-527A	BRACKET	ASSY C-GUIDE	
		201	256-934B	PLATE	TOP	
		204	465-026A	OPENER	DOOR	
		205	321-517B	BRACKET	LEFT (D17)	
		206	321-518A	BRACKET	RIGHT (D17)	
		207	435-278A	GEAR	RACK N/D	
		208	256-910A	PLATE	GND TOP	
		210	321-440A	BRACKET	SIDE	
		213	442-351A	SPRING	OC	NSP
		214	465-028A	OPENER	CST	NSP
		215	442-357A	SPRING	RID	NSP
		216	465-027A	OPENER	RID	NSP
		217	324-647A	HOLDER	R	NSP
		218	321-407A	BRACKET	SUPPORT	NSP
		219	321-405A	BRACKET	CARRIER	NSP
		220	324-646A	HOLDER	L	NSP
		221	333-210A	LEVER	DT	NSP
		222	442-358B	SPRING	DT	NSP
		225	384-074A	GUIDE	CST	
		226	442-352A	SPRING	L	NSP
		227	435-254A	GEAR	L	NSP
		228	442-350A	SPRING	S/W	

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		229	333-204A	LEVER	S/W	NSP
		230	423-368A	SHAFT	D	NSP
		231	442-353A	SPRING	R	NSP
		232	435-255A	GEAR	R	NSP
		233	435-256B	GEAR	C (HOOK ADDED)	NSP
		234	442-359C	SPRING	CUSHION (D17F/L)	NSP
		235	442-354A	SPRING	CC	NSP
		236	276-086A	CAP	DRIVE	NSP
<b>SCREW</b>						
		400	1MDC0302418	PAN HEAD MACHINE SCREW PWASH+	D 3.0 L 8.0 MSWR3/FZY	
		401	1MPK0261418	PAN HEAD MACHINE SCREW +,-	D 2.6 L 4.0 MSWR3/FZY	
		402	353-021D	SCREW	SPECIAL	
		404	353-048D	SCREW	CONE POINT 3X8	
		408	1MBC0302418	BINDING HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		411	353-046B	SCREW	SPECIAL (3X8 FZMY)	
		412	1MBC0302818	BINDING HEAD MACHINE SCREW +	D 3.0 L 12 MSWR3/FZY	
		421	1MPC0302618	PAN HEAD MACHINE SCREW +!	D3.0 L10.0,MSWR3/FZY	
		422	1MPC0302418	PAN HEAD MACHINE SCREW +!	D 3.0 L 8.0 MSWR3/FZY	
		425	1SRF0302418	BRAIZER HD TAP TITE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		426	1MPC0302018	PAN HEAD MACHINE SCREW +!	D 3.0 L 6.0 MSWR3/FZY	
<b>NUT, WASHER</b>						
		503	354-020E	WASHER	STOPPER	
		504	354-001B	WASHER	P.S D3.1XD6X0.5T	
		505	354-080E	WASHER	STOPPER	
		506	352-025A	NUT	NYLON M3	
		507	354-020J	WASHER	STOPPER(2.6X4.8X0.5)	
		508	352-033A	NUT	NUT NYLON(M3)	
		511	354-080C	WASHER	STOPPER D2.6XD5X0.5T	
		512	354-080E	WASHER	STOPPER	NSP
		513	354-080A	WASHER	STOPPER	NSP
		514	354-080B	WASHER	STOPPER	NSP
		516	354-033B	WASHER	STOPPER	



# 1-2. 8mm Mechanism

RUN DATE : 95.09.26  
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
ASSEMBLY PARTS SECTION						
		A00	412-133A	DECK	SUB ASSY D-21 (F/L)	
		A01	413-306C	DRUM	ASSY DD3SQ	
		A02	225-282A	BASE	ASSY LOADING	
		A30	219-021A	HOUSING	ASSY F/L (D-21)	
PARTS SECTION						
		001	414-156C	MOTOR	D-21 STATTOR,DRUM DM-21 DD1P	NSP
		002	413-352B	DRUM	SUB ASSY	
		003	515-655B	PWB ASSY!	DRUM SIGNAL	NSP
		004	255-148A	PLATE	SIGNAL GROUND	
		005	225-279A	BASE	ASSY DRUM	
		006	225-283A	BASE	SUB ASSY LOADING	
		007	225-285A	BASE	ASSY S/POST(T)	
		008	435-329A	GEAR	SUB ASSY LOADING(T)	
		009	435-327A	GEAR	CAM	
		010	435-332A	GEAR	SUB ASSY LOADING(S)	
		011	225-288A	BASE	ASSY S/POST(S)	
		012	657-031A	SENSOR	ASSY LED	
		013	333-264A	LEVER	ASSY DRIVE	
		014	255-058A	PLATE	L/BASE	
		015	321-535A	BRACKET	ASSY SLANT GUIDE	
		016	386-310A	ARM	ASSY SLANT ROLLER	
		017	386-313A	ARM	ASSY TENSION	
		018	333-254A	LEVER	ASSY BRAKE	
		019	375-015A	DISC	ASSY REEL(S)	
		020	222-019A	PROTECTOR	T/BAND	
		021	321-534A	BRACKET	SENSOR	
		022	386-307A	ARM	ASSY IDLER	
		023	435-323A	GEAR	ASSY DRIVE	
		024	452-054A	BELT	REEL DRIVE (YAMAUCHI)	
		025	322-051A	SUPPORTER	CST	
		026	657-032A	SENSOR	ASSY END	
		027	338-093A	BRAKE	ASSY SOFT	
		028	431-028A	IDLER	BELT	
		029	445-005A	SPACER	CAM GEAR	
		030	435-334A	GEAR	ASSY CONVERSION	
		040	414-137B	MOTOR	ASSY LOADING	
		041	313-041B	CHASSIS	ASSY MAIN(F/L)	NSP
		042	338-104A	BRAKE	CLUTCH	
		043	321-533A	BRACKET	RECOG S/W	
		044	515-680A	PWB ASSY!	ASSY JUNCTION	
		045	375-016A	DISC	ASSY REEL(T)	
		046	324-823A	HOLDER	SHAFT	
		047	333-267A	LEVER	ASSY T/UP	
		049	435-321A	GEAR	MIDDLE	
		050	435-348A	GEAR	ASSY TRANSFER	
		051	414-141A	MOTOR	D-21 CAPSTAN MOTOR GSD	
		052	386-319A	ARM	ASSY PINCH	

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		053	333-271A	LEVER	ASSY PINCH	NSP
		054	333-269A	LEVER	ASSY MODE	
		056	504-476A	PWB	MODE S/W	
		057	435-347A	GEAR	ASSY MODE	
		058	442-486A	SPRING	T/UP ARM(C)	
		059	386-316A	ARM	ASSY T/UP	
		060	352-028A	NUT	T/UP ARM(A)	
		061	352-030A	NUT	T/UP ARM(B)	
		062	423-483A	SHAFT	ASSY WORM(L)	
		100	333-323A	LEVER	ASSY LOADING (L)	NSP
		101	257-058A	PLATE	GEAR	
		102	435-399A	GEAR	A	
		103	435-401A	GEAR	C	
		104	435-400A	GEAR	B	
		105	435-402A	GEAR	D	
		106	225-329A	BASE	SIDE (L)	
		107	257-057A	PLATE	SIDE BASE	
		108	414-162A	MOTOR	ASSY HOUSING	
		110	577-014A	PRISM	END SENSOR	
		111	225-332A	BASE	ASSY LOADING	
		112	257-060A	PLATE	ASSY BASE	
		113	225-328A	BASE	SIDE (R)	
		114	333-319A	LEVER	SWITCH	NSP
		115	333-320A	LEVER	DOOR	NSP
		116	442-593A	SPRING	LOCK(L)	
		117	333-318A	LEVER	LOCK	NSP
		118	333-322A	LEVER	ASSY LOADING (R)	NSP
		119	256-889A	PLATE	CGND	
<b>SCREW</b>						
		400	353-078B	SCREW	MACHINE+2X9	
		401	353-152A	SCREW	PS (M1.7X2)	
		402	353-153A	SCREW	PS (M2X3)	
		403	353-153B	SCREW	PS(M2X4)	
		404	353-153C	SCREW	PS (M2X5)	
		405	353-153D	SCREW	PS (M2X6)	
		407	353-091C	SCREW	SPECIAL M	
		408	1MFU0201418	FLAT HEAD MACHINE SCREW PREC 1	D 2.0 L 4.0 MSWR3/FZY	
<b>NUT, WASHER</b>						
		500	354-101A	WASHER	SLIDE (1.5TX3.0X0.13)	
		501	354-099A	WASHER	STOP(1.25X3.0X0.25)	
		501	354-099B	WASHER	STOP(1.25X3.0X0.25)	
		502	354-104A	WASHER	STOP (2.2X5.0X0.25)	
		520	354-048E	WASHER	PS+D6XD2.6XT0.5	
		521	354-120A	WASHER	REEL STOP	

## 2. Cabinet & Main Frame Section

RUN DATE : 95.09.26  
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
ASSEMBLY PARTS SECTION						
		A40	315-314N	FRAME	ASSY MAIN	NSP
		A41	3501R-0249A	BOARD ASSY	KEYBOARD 2NDDD1S	
		A42	3501R-0248A	BOARD ASSY	TIMER 2NDDD1S	
		A43	258-722F	PANEL	FRONT ASSY	
		A44	3501R-0247B	BOARD ASSY	SMPS	
		A45	501-522A	MODULE	PRE AMP ASSY	
		A46	3501R-0245D	BOARD ASSY	MAIN	
		A47	3501R-0251A	BOARD ASSY	8MM PRE-AMP(2NDDD1S)	
		A48	3501R-0246A	BOARD ASSY	8MM MAIN (2NDDD1S)	
PARTS SECTION						
		250	217-472C	CASE	TOP	NSP
		251	321-526A	BRACKET	HOUSING	
		260	315-300B	FRAME	MAIN	
		262	257-061A	PLATE	GND (FTZ)	NSP
		263	324-976A	HOLDER	PWB	NSP
		275	324-872A	HOLDER	DIGITRON	NSP
		278	273-116A	KNOB	TRACKING	
		280	258-717F	PANEL	FRONT	
		282	220-075D	COVER	DOOR ASSY	
		283	226-104F	DOOR	CST	
		284	442-469A	SPRING	DOOR	
		288	524-013A	MAGNET	ASSY DOOR	
		289	321-718A	BRACKET	ASSY COVER DOOR	
		290	321-719A	BRACKET	ASSY DAMPER	
		291	435-465B	GEAR	ASSY DAMPER(T;60)	
		300	681-051A	CORD	KKP-419J B-172 KLCE-2F PAL	
		300	681-951A	CORD	H03VVH2-F 2X0.75MM LP21R/PE221	
		320	258-596G	PANEL	ASSY DISTRIBUTOR	
		321	257-006A	PLATE	BOTTOM GROUND	
		330	221-834A	COVER	BOTTOM	
		340	226-064K	DOOR	CST 8MM	
		341	442-591A	SPRING	DOOR	
		342	340-088A	HOLDER	ASSY P/AMP 8MM	
SCREW						
		451	353-046C	SCREW	(3X10 FZMY)	
		452	353-051A	SCREW	SPECIAL(3X10 FZMY)	
		459	353-046C	SCREW	(3X10 FZMY)	
		462	353-136A	SCREW	SPECIAL(4.6X12.5 FBK)	
		472	353-090A	SCREW	SPECIAL TP	

### 3. Packing Accessory Section

RUN DATE : 95.09.26  
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		801	480-657G	INSTRUCTION ASSY		
		802	290-452A	BOX CARTON		
		803	283-217A	PACKING		
		804	291-002D	SHEET CUSHION		
		808	534-008C	BATTERY	AAAM(R03) 1.5V 1PAIR(LOCAL)	NSP
		810	861-505J	CABLE SET ASSY	RF-CABLE ASSY PAL FTZ	

### 4. Remote Control Section

RUN DATE : 95.09.26  
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		900	597-121F	REMOTE CONTROL	2ND D/DECK ASSY	
		901	236-558A	WINDOW	FILTER(2ND D/D)	NSP
		902	220-084B	COVER	D/D3 R/C	NSP
		903	217-485H	CASE	TOP	NSP
		904	275-699B	BUTTON	D/D2 R/C	NSP
		905	275-612A	BUTTON	RUBBER VHS (R/C)	NSP
		906	275-611A	BUTTON	RUBBER 8MM (R/C)	NSP
		907	515-824E	PWB ASSY!	REMOCON (2ND DOUBLE DECK)	NSP
		908	442-611A	SPRING	COIL (R/C)	NSP
		909	217-486D	CASE	BOTTOM	NSP
		910	221-857D	COVER	BATTERY	
		911	477-054A	RUBBER	BUMPON	NSP

### 5. Fixture Section

RUN DATE : 95.09.26  
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		FIX	960-015J	FIXTURE	SVC FIXTURE	
		FIX1	232-972A	BOARD ASSY	SVC FIXTURE	
		FIX2	515-789A	PWB ASSY	FIXTURE (PRE-AMP)	

## 6. Electrical Section

RUN DATE : 95.09.26

**CAUTION:** The \* marks in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the SAFETY PRECAUTIONS and SERVICING PRECAUTIONS in the manual. Do not degrade the safety of the unit through improper servicing.

### Tolerance

Symbol	C	J	K	M	N	Z	P	A
%	±2	±5	±10	±20	±30	+80 -20	+100 -10	+100 -10

CC, CJ, CK: Capacitor, Ceramic  
CE: Capacitor, Electrolytic  
CQ: Capacitor, Polyester

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
<b>CAPACITOR</b>				
	C001	OCN2230H948	0.022M 25V Z F TA26	
	C002	OCN1040K948	0.1M 50V Z F TA26	
	C003	OCN2230H948	0.022M 25V Z F TA26	
	C004	OCN1040K948	0.1M 50V Z F TA26	
	C005	OCN1040K948	0.1M 50V Z F TA26	
	C006	OCN2230H948	0.022M 25V Z F TA26	
	C007	OCE4764F638	47M SRA/SS 16V M FM5 TP(5)	
	C008	OCN2230H948	0.022M 25V Z F TA26	
	C009	OCN2230H948	0.022M 25V Z F TA26	
	C010	OCE4764F638	47M SRA/SS 16V M FM5 TP(5)	
	C011	OCN1520F668	1500P 16V M X TA26	
	C012	OCX3300K408	33P 50V JSL TA26	
	C013	OCN2230H948	0.022M 25V Z F TA26	
	C014	OCN2710K518	270P 50V KB TA26	
	C015	OCE3344K638	0.33M SRA 50V M FM5 TP(5)	
	C016	OCE4754K638	4.7M SRA 50V M FM5 TP(5)	
	C017	OCE4764F638	47M SRA/SS 16V M FM5 TP(5)	
	C018	OCN2230H948	0.022M 25V Z F TA26	
	C019	OCX1000K408	10P 50V JSL TA26	
	C020	OCX2400K408	24P 50V JSL TA26	
	C021	OCN1030F678	0.01M 16V M Y TA26	
	C022	OCX2200K408	22P 50V J SL TP26	
	C023	OCN1030F678	0.01M 16V M Y TA26	
	C024	OCX2200K408	22P 50V J SL TP26	
	C025	OCX1500K408	15P 50V JSL TA26	
	C026	OCX1800K408	18P 50V JSL TA26	
	C027	OCN1030F678	0.01M 16V M Y TA26	
	C028	OCX1200K408	12P 50V JSL TA26	
	C029	OCX0600K015	6P 50V CNP0 TS	
	C030	OCX3300K408	33P 50V JSL TA26	
	C031	OCE4764F638	47M SRA/SS 16V M FM5 TP(5)	
	C032	OCN2230H948	0.022M 25V Z F TA26	
	C033	OCX2400K408	24P 50V JSL TA26	
	C034	OCN1040K948	0.1M 50V Z F TA26	
	C201	OCN2230H948	0.022M 25V Z F TA26	
	C202	OCE4764F638	47M SRA/SS 16V M FM5 TP(5)	
	C203	OCN1030F678	0.01M 16V M Y TA26	
	C204	OCN1030F678	0.01M 16V M Y TA26	
	C205	OCX2700K408	27P 50V JSL TA26	
	C206	OCE4743K638	0.47M SRE/SS50V M FM5 TP(5)	
	C207	OCN1030F678	0.01M 16V M Y TA26	
	C208	OCE1054K636	1.0U SRA 50V M FM5 BP TP(D)	
	C209	OCQ4734K409	0.047U 50V J POLY TE TP	

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C210	OCQ1044K409	0.1U 50V J POLY TE TP
		C211	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C212	OCN1210K518	120P 50V KB TA26
		C213	OCN1510K518	150P 50V KB TA26
		C214	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C215	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C216	OCN4720F668	4700P 16V M X TA26
		C217	OCQ4734K409	0.047U 50V J POLY TE TP
		C218	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C219	OCQ2234K409	0.022U 50V J POLY TE TP
		C220	OCE2254K638	2.2M SRA 50V M FM5 TP(5)
		C221	OCQ4734K409	0.047U 50V J POLY TE TP
		C222	OCE1054K636	1.0U SRA 50V M FM5 BP TP(D)
		C223	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C224	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C225	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C226	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C227	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C228	OCQ4734K409	0.047U 50V J POLY TE TP
		C229	OCN1030F678	0.01M 16V M Y TA26
		C230	OCQ1221N409	0.0012U 100V J POLY TP
		C231	OCE1054K636	1.0U SRA 50V M FM5 BP TP(D)
		C232	OCQ2234K409	0.022U 50V J POLY TE TP
		C233	OCE2254K638	2.2M SRA 50V M FM5 TP(5)
		C234	OCQ2234K409	0.022U 50V J POLY TE TP
		C235	OCE4766F638	47M SMS 16V M FM5 TP5
		C236	OCN1030F678	0.01M 16V M Y TA26
		C237	OCN1030F678	0.01M 16V M Y TA26
		C238	OCE4766F638	47M SMS 16V M FM5 TP5
		C239	OCX2400K415	24P 50V JNP0 TP
		C240	OCX2200K415	22P 50V JNP0 TS
		C241	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C242	OCE4766F638	47M SMS 16V M FM5 TP5
		C243	OCN2230H948	0.022M 25V Z F TA26
		C244	OCN1020K518	1000P 50V KB TA26
		C245	OCN1020K518	1000P 50V KB TA26
		C246	OCN1030F678	0.01M 16V M Y TA26
		C247	OCN1030F678	0.01M 16V M Y TA26
		C248	OCN1030F678	0.01M 16V M Y TA26
		C249	OCN1030F678	0.01M 16V M Y TA26
		C250	OCE2273C638	220M SRE 6.3V M FM5 TP(5)
		C251	OCN1030F678	0.01M 16V M Y TA26
		C252	OCE4766F638	47M SMS 16V M FM5 TP5
		C253	OCN1030F678	0.01M 16V M Y TA26
		C254	624-027A	GOLD 0.047F-5.5V D13.0X8.5 NEC



S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C255	OCE4766F638	47M SMS 16V M FM5 TP5
		C256	OCE1074F638	100U SRA 16V M FM5 TP(5)
		C257	OCE2273C638	220M SRE 6.3V M FM5 TP(5)
		C258	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C259	OCQ8221N409	0.0082U 100V J POLY TP
		C260	OCE4766F638	47M SMS 16V M FM5 TP5
		C261	OCN1030F678	0.01M 16V M Y TA26
		C262	OCE4766F638	47M SMS 16V M FM5 TP5
		C263	OCN2210K518	220P 50V K B TA26
		C264	OCN1030F678	0.01M 16V M Y TA26
		C266	OCN1040K948	0.1M 50V Z F TA26
		C267	OCN1030F678	0.01M 16V M Y TA26
		C268	OCE4766F638	47M SMS 16V M FM5 TP5
		C271	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C272	OCN4730K948	0.047M 50V Z F TA26
		C273	OCE4766F638	47M SMS 16V M FM5 TP5
		C275	OCN4730K948	0.047M 50V Z F TA26
		C276	OCN1010K518	100P 50V K B TA26
		C277	OCN1010K518	100P 50V K B TA26
		C278	OCE4766F638	47M SMS 16V M FM5 TP5
		C279	OCN1030F678	0.01M 16V M Y TA26
		C280	OCN1040K948	0.1M 50V Z F TA26
		C281	OCE4766F638	47M SMS 16V M FM5 TP5
		C298	OCE4766K638	47M SMS 50V M FM5 TP
		C299	OCN1040K948	0.1M 50V Z F TA26
		C2A1	OCN1040K948	0.1M 50V Z F TA26
		C2A2	OCN1040K948	0.1M 50V Z F TA26
		C2A3	OCN1030F678	0.01M 16V M Y TA26
		C301	OCN1030F678	0.01M 16V M Y TA26
		C302	OCN1030F678	0.01M 16V M Y TA26
		C303	OCX4700K408	47P 50V JSL TA26
		C308	OCE4766F638	47M SMS 16V M FM5 TP5
		C30B	OCN1040K948	0.1M 50V Z F TA26
		C30C	OCN1040K948	0.1M 50V Z F TA26
		C30E	OCN1030F678	0.01M 16V M Y TA26
		C30F	OCE4766F638	47M SMS 16V M FM5 TP5
		C30G	OCN1020K518	1000P 50V K B TA26
		C30I	OCN1030F678	0.01M 16V M Y TA26
		C30J	OCX3300K408	33P 50V JSL TA26
		C30K	OC00500K115	5P 50V DNP0 TS
		C30L	OCN1030F678	0.01M 16V M Y TA26
		C30M	OCN1030F678	0.01M 16V M Y TA26
		C30N	OCN1030F678	0.01M 16V M Y TA26
		C312	OCX3300K408	33P 50V JSL TA26
		C314	OCE4766F638	47M SMS 16V M FM5 TP5
		C315	OCN1030F678	0.01M 16V M Y TA26
		C316	OCE4766F638	47M SMS 16V M FM5 TP5
		C317	OCN1030F678	0.01M 16V M Y TA26
		C318	OCN4710K518	470P 50V K B TA26
		C31A	OCN1030F678	0.01M 16V M Y TA26
		C31C	OCN8200K518	82PF 50V K B TA26
		C31E	OCN1030F678	0.01M 16V M Y TA26
		C31H	OCE4766F638	47M SMS 16V M FM5 TP5
		C31J	OCX1000K408	10P 50V JSL TA26
		C31K	OCX1200K408	12P 50V JSL TA26
		C31L	OCN1030F678	0.01M 16V M Y TA26
		C320	OCE4766F638	47M SMS 16V M FM5 TP5
		C322	OCN1030F678	0.01M 16V M Y TA26
		C323	OCN1030F678	0.01M 16V M Y TA26
		C324	OCN1030F678	0.01M 16V M Y TA26
		C325	OCN1030F678	0.01M 16V M Y TA26
		C326	OCN1030F678	0.01M 16V M Y TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C327	OCN1030F678	0.01M 16V M Y TA26
		C328	OCE1053K638	1.0M SRE/SE50V M FM5 TP(5)
		C329	OCE4766F638	47M SMS 16V M FM5 TP5
		C330	OCE1053K638	1.0M SRE/SE50V M FM5 TP(5)
		C332	OCX2400K408	24P 50V JSL TA26
		C333	OCN8200K518	82PF 50V K B TA26
		C334	OCE4766F638	47M SMS 16V M FM5 TP5
		C335	OCN1030F678	0.01M 16V M Y TA26
		C336	OCN4710K518	470P 50V K B TA26
		C337	OCN1030F678	0.01M 16V M Y TA26
		C338	OCN2230H948	0.022M 25V Z F TA26
		C339	OCE3354K638	3.3M SRA 50V M FM5 TP(5)
		C340	OCN4730K948	0.047M 50V Z F TA26
		C341	OCE1043K638	0.1M SRE 50V M FM5 TP(5)
		C342	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C343	OCE3354K638	3.3M SRA 50V M FM5 TP(5)
		C344	OCE2253K638	2.2M SRE 50V M FM5 TP(5)
		C345	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C349	OCX3900K408	39P 50V JSL TA26
		C350	OCE4743K638	0.47M SRE/S50V M FM5 TP(5)
		C351	OCN1020K518	1000P 50V K B TA26
		C352	OCE2246K638	0.22M SMS 50V M FM5 TP(5)
		C353	OCN1510K518	150P 50V K B TA26
		C354	OCE1053K638	1.0M SRE/SE50V M FM5 TP(5)
		C355	OCN2230H948	0.022M 25V Z F TA26
		C357	OCN1030F678	0.01M 16V M Y TA26
		C358	OCN1030F678	0.01M 16V M Y TA26
		C359	OCE4775F638	470M SR 16V M FM5 TP(5)
		C360	OCN1030F678	0.01M 16V M Y TA26
		C361	OCX0100K608	1.0P 50V MSL TA(26)
		C362	OCE3354K638	3.3M SRA 50V M FM5 TP(5)
		C363	OCN1210K518	120P 50V K B TA26
		C364	OCX3300K408	33P 50V JSL TA26
		C365	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C366	OCN1040K948	0.1M 50V Z F TA26
		C367	OCQ6831N409	0.068U 100V J POLY TP
		C368	OCE4743K638	0.47M SRE/S50V M FM5 TP(5)
		C369	OCE2246K638	0.22M SMS 50V M FM5 TP(5)
		C370	OCE4775F638	470M SR 16V M FM5 TP(5)
		C371	OCN1030F678	0.01M 16V M Y TA26
		C372	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C373	OCN4710K518	470P 50V K B TA26
		C374	OCX2400K408	24P 50V JSL TA26
		C375	OCE4766F638	47M SMS 16V M FM5 TP5
		C376	OCE4743K638	0.47M SRE/S50V M FM5 TP(5)
		C377	OCN2230H948	0.022M 25V Z F TA26
		C378	OCX1800K408	18P 50V JSL TA26
		C379	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C380	OCN4730K948	0.047M 50V Z F TA26
		C381	OCN1030F678	0.01M 16V M Y TA26
		C394	OCN1030F678	0.01M 16V M Y TA26
		C398	OCE1053K638	1.0M SRE/SE50V M FM5 TP(5)
		C399	OCN1030F678	0.01M 16V M Y TA26
		C3A0	OCX1000K408	10P 50V JSL TA26
		C3A1	OCN1030F678	0.01M 16V M Y TA26
		C3A2	OCN1030F678	0.01M 16V M Y TA26
		C3A3	OCE4766F638	47M SMS 16V M FM5 TP5
		C3A4	OCN2230H948	0.022M 25V Z F TA26
		C3A5	OCN1030F678	0.01M 16V M Y TA26
		C3A6	OCN1030F678	0.01M 16V M Y TA26
		C3A7	OCN1040K948	0.1M 50V Z F TA26
		C3A8	OCE4744K638	0.47M SRA 50V M FM5 TP(5)

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C3B0	OCE4744K638	0.47M SRA 50V M FM5 TP(5)
		C3B1	OCN2230H948	0.022M 25V Z F TA26
		C3B2	OCE2254K638	2.2M SRA 50V M FM5 TP(5)
		C3B3	OCN1210K518	120P 50V K B TA26
		C3B4	OCC0600K015	6P 50V C NP0 TS
		C3B5	OCX1000K408	10P 50V J SL TA26
		C3B6	OCE4766F638	47M SMS 16V M FM5 TP5
		C3B7	OCN1030F678	0.01M 16V M Y TA26
		C3B8	OCC3900K415	39P 50V J NPO TP
		C3B9	OCN2230H948	0.022M 25V Z F TA26
		C3C0	OCN1030F678	0.01M 16V M Y TA26
		C3C1	OCN1040K948	0.1M 50V Z F TA26
		C3C2	OCE4766F638	47M SMS 16V M FM5 TP5
		C3C3	OCN2230H948	0.022M 25V Z F TA26
		C3C4	OCE1044K638	0.1M SRA 50V M FM5 TP(5)
		C3C5	OCN1030F678	0.01M 16V M Y TA26
		C3C6	OCN1030F678	0.01M 16V M Y TA26
		C3C7	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C3C8	OCN1030F678	0.01M 16V M Y TA26
		C3C9	OCN1040K948	0.1M 50V Z F TA26
		C3E0	OCX1500K408	15P 50V J SL TA26
		C3E1	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C3E2	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C3E3	OCE4766F638	47M SMS 16V M FM5 TP5
		C3E4	OCN1040K948	0.1M 50V Z F TA26
		C3E5	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C3E6	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C3E7	OCN2230H948	0.022M 25V Z F TA26
		C3E8	OCE4766F638	47M SMS 16V M FM5 TP5
		C3E9	OCN3310K518	330P 50V K B TA26
		C3F0	OCN1030F678	0.01M 16V M Y TA26
		C3F1	OCX2200K408	22P 50V J SL TP26
		C3F2	OCE1044K638	0.1M SRA 50V M FM5 TP(5)
		C3F3	OCN1010K518	100P 50V K B TA26
		C3F4	OCX1200K408	12P 50V J SL TA26
		C3F5	OCX6800K408	68P 50V J SL TA26
		C3F6	OCN1030F678	0.01M 16V M Y TA26
		C3F7	OCN1010K518	100P 50V K B TA26
		C3F8	OCN1020K518	1000P 50V K B TA26
		C3F9	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C3G0	OCN8200K518	82PF 50V K B TA26
		C3G1	OCN3910K518	390P 50V K B TA26
		C3G2	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C3G3	OCN1520F668	1500P 16V M X TA26
		C3G4	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C3G5	OCE4766F638	47M SMS 16V M FM5 TP5
		C3G6	OCN2230H948	0.022M 25V Z F TA26
		C3G7	OCE4766F638	47M SMS 16V M FM5 TP5
		C3G8	OCN2230H948	0.022M 25V Z F TA26
		C3G9	OCN1030F678	0.01M 16V M Y TA26
		C3H0	OCN4710K518	470P 50V K B TA26
		C3H1	OCE4766F638	47M SMS 16V M FM5 TP5
		C3H2	OCN2230H948	0.022M 25V Z F TA26
		C3H3	OCN2230H948	0.022M 25V Z F TA26
		C3H4	OCE4766F638	47M SMS 16V M FM5 TP5
		C3H5	OCC0400K015	4P 50V C NP0 TS
		C3H6	OCX2200K408	22P 50V J SL TP26
		C3H7	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C3H8	OCN1030F678	0.01M 16V M Y TA26
		C3H9	OCN1040K948	0.1M 50V Z F TA26
		C3K0	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C3K1	OCX4700K408	47P 50V J SL TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C3K2	OCQ8221N409	0.0082U 100V J POLY TP
		C401	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C402	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C403	OCN1040K948	0.1M 50V Z F TA26
		C404	OCN1040K948	0.1M 50V Z F TA26
		C405	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C406	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C407	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C408	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C409	OCE2266F638	22M SMS 16V M FM5 TP5
		C410	OCN1040K948	0.1M 50V Z F TA26
		C411	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C412	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C413	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C414	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C415	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C416	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C417	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C418	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C419	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C420	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C422	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C423	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C424	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C425	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C426	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C427	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C428	OCE2274F638	220M SRA 16V M FM5 TP(5)
		C429	OCE2266F638	22M SMS 16V M FM5 TP5
		C430	OCE3366F638	33M SMS 16V M FM5 TP(5)
		C431	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C432	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C433	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C434	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C435	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C436	OCE2274F638	220M SRA 16V M FM5 TP(5)
		C437	OCN2230H948	0.022M 25V Z F TA26
		C438	OCN2230H948	0.022M 25V Z F TA26
		C439	OCE2274F638	220M SRA 16V M FM5 TP(5)
		C440	OCE4766F638	47M SMS 16V M FM5 TP5
		C441	OCN1040K948	0.1M 50V Z F TA26
		C442	OCQ1231N409	0.012U 100V J POLY TP
		C443	OCQ1031N409	0.01UF 100V J PE TP
		C444	OCN1030F678	0.01M 16V M Y TA26
		C445	OCE4766F638	47M SMS 16V M FM5 TP5
		C446	OCQ1031N409	0.01UF 100V J PE TP
		C447	OCN1030F678	0.01M 16V M Y TA26
		C448	OCE1074F638	100U SRA 16V M FM5 TP(5)
		C449	OCQ1031N409	0.01UF 100V J PE TP
		C450	OCE2266F638	22M SMS 16V M FM5 TP5
		C451	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C452	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C453	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C454	OCN1040K948	0.1M 50V Z F TA26
		C455	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C456	OCN1040K948	0.1M 50V Z F TA26
		C457	OCQ8221N409	0.0082U 100V J POLY TP
		C458	OCE2266F638	22M SMS 16V M FM5 TP5
		C459	OCE3366F638	33M SMS 16V M FM5 TP(5)
		C460	OCN3910K518	390P 50V K B TA26
		C461	OCQ5631N409	0.056U 100V J POLY TP
		C462	OCQ3331N409	0.033U 100V J POLY TP

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C463	OCN2210K518	220P 50V K B TA26
		C464	OCN1030F678	0.01M 16V M Y TA26
		C465	OCE1074F638	100U SRA 16V M FM5 TP(5)
		C466	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C467	OCQ1031N409	0.01UF 100V J PE TP
		C468	OCE1076F638	100M SMS 16V M FM5 TP(5)
		C469	OCN2230H948	0.022M 25V Z F TA26
		C470	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C471	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C472	OCQ1231N409	0.012U 100V J POLY TP
		C473	OCN1030F678	0.01M 16V M Y TA26
		C474	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C475	OCN2710K518	270P 50V K B TA26
		C476	OCE4744K638	0.47M SRA 50V M FM5 TP(5)
		C477	OCN1030F678	0.01M 16V M Y TA26
		C478	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C479	OCN1030F678	0.01M 16V M Y TA26
		C480	OCN1030F678	0.01M 16V M Y TA26
		C481	OCE1074F638	100U SRA 16V M FM5 TP(5)
		C482	OCN1030F678	0.01M 16V M Y TA26
		C483	OCN1040K948	0.1M 50V Z F TA26
		C484	OCN1030F678	0.01M 16V M Y TA26
		C485	OCE2274F638	220M SRA 16V M FM5 TP(5)
		C486	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C487	OCN1030F678	0.01M 16V M Y TA26
		C488	OCQ1231N409	0.012U 100V J POLY TP
		C489	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C490	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C491	OCQ1031N409	0.01UF 100V J PE TP
		C492	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C493	OCQ1031N409	0.01UF 100V J PE TP
		C494	OCQ1031N409	0.01UF 100V J PE TP
		C495	OCN2230H948	0.022M 25V Z F TA26
		C496	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C497	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C498	OCE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C499	OCE4766F638	47M SMS 16V M FM5 TP5
		C4A0	OCN1030F678	0.01M 16V M Y TA26
		C4A1	OCE4766F638	47M SMS 16V M FM5 TP5(VHS)
		C4A1	OCN1030F678	0.01M 16V M Y TA26(8mm)
		C4A2	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C4A3	OCN1030F678	0.01M 16V M Y TA26(8mm)
		C4A3	OCN1510K518	150P 50V K B TA26(VHS)
		C4A4	OCE1054K638	1M SRA/SS50V M FM5 TP(5)(8mm)
		C4A4	OCN1510K518	150P 50V K B TA26(VHS)
		C4A5	OCE1074F638	100U SRA 16V M FM5 TP(5)(VHS)
		C4A5	OCX3300K408	33P 50V J SLTA26(8mm)
		C4A6	OCN1020K518	1000P 50V K B TA26(8mm)
		C4A6	OCN1040K948	0.1M 50V Z F TA26(VHS)
		C4A7	OCN1020K518	1000P 50V K B TA26
		C4A8	OCE1054K638	1M SRA/SS50V M FM5 TP(5)(8mm)
		C4A8	OCN1040K948	0.1M 50V Z F TA26(VHS)
		C4A9	OCN1040K948	0.1M 50V Z F TA26(VHS)
		C4A9	OCN2220F668	2200P 16V M X TA26(8mm)
		C4B0	OCN1520F668	1500P 16V M X TA26
		C4B1	OCE3366F638	33M SMS 16V M FM5 TP(5)(8mm)
		C4B1	OCN1030F678	0.01M 16V M Y TA26(VHS)
		C4B2	OCE2254K638	2.2M SRA 50V M FM5 TP(5)(8mm)
		C4B2	OCE4766F638	47M SMS 16V M FM5 TP5(VHS)
		C4B3	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C4B3	OCN1040K948	0.1M 50V Z F TA26
		C4B4	OCE1074F638	100U SRA 16V M FM5 TP(5)

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C4B4	OCN1020K518	1000P 50V K B TA26
		C4B5	OCN1020K518	1000P 50V K B TA26
		C4B6	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C4B7	OCN4710K518	470P 50V K B TA26
		C4B8	OCN1030F678	0.01M 16V M Y TA26
		C4B9	OCK3320K515	3300P 50V K B TS
		C4C0	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C4C1	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C4C2	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C4C3	OCE4754K638	4.7M SRA 50V M FM5 TP(5)
		C4C4	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C4C5	OCN4710K518	470P 50V K B TA26
		C4C6	OCN1030F678	0.01M 16V M Y TA26
		C4C7	OCK3320K515	3300P 50V K B TS
		C4C8	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C4C9	OCN1020K518	1000P 50V K B TA26
		C4E0	OCN1020K518	1000P 50V K B TA26
		C4E1	OCE4766F638	47M SMS 16V M FM5 TP5
		C4E2	OCE2254K638	2.2M SRA 50V M FM5 TP(5)
		C4E3	OCE3366F638	33M SMS 16V M FM5 TP(5)
		C4E4	OCN1520F668	1500P 16V M X TA26
		C4E5	OCN2220F668	2200P 16V M X TA26
		C4E6	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C4E7	OCN1020K518	1000P 50V K B TA26
		C4E8	OCN1020K518	1000P 50V K B TA26
		C4E9	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C4F0	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C4F1	OCX3300K408	33P 50V J SL TA26
		C4F2	OCN1030F678	0.01M 16V M Y TA26
		C4F3	OCN1220F668	1200P 16V M X TA26
		C4F4	OCE4766F638	47M SMS 16V M FM5 TP5
		C4F5	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C4F6	OCN2230H948	0.022M 25V Z F TA26
		C4F7	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C4F8	OCN1220F668	1200P 16V M X TA26
		C4G0	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C4G1	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C4G2	OCN2230H948	0.022M 25V Z F TA26
		C4G3	OCN1030F678	0.01M 16V M Y TA26
		C500	OCN1040K948	0.1M 50V Z F TA26
		C501	OCN1040K948	0.1M 50V Z F TA26
		C502	OCX1800K408	18P 50V J SL TA26
		C503	OCX2200K408	22P 50V J SL TP26
		C504	OCE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C505	OCN1040K948	0.1M 50V Z F TA26
		C506	OCN1040K948	0.1M 50V Z F TA26
		C507	OCN1020K518	1000P 50V K B TA26
		C508	OCN1040K948	0.1M 50V Z F TA26
		C509	OCN1030F678	0.01M 16V M Y TA26
		C510	OCN1040K948	0.1M 50V Z F TA26
		C511	OCE4766F638	47M SMS 16V M FM5 TP5
		C512	OCN1040K948	0.1M 50V Z F TA26
		C513	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C514	OCE4766F638	47M SMS 16V M FM5 TP5
		C515	OCN1040K948	0.1M 50V Z F TA26
		C516	OCN1030F678	0.01M 16V M Y TA26
		C517	OCN1040K948	0.1M 50V Z F TA26
		C518	OCN1040K948	0.1M 50V Z F TA26
		C519	OCN1040K948	0.1M 50V Z F TA26
		C520	OCN1040K948	0.1M 50V Z F TA26
		C521	OCE4766F638	47M SMS 16V M FM5 TP5
		C522	OCN1030F678	0.01M 16V M Y TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C523	0CN4730K948	0.047M 50V Z F TA26
		C524	0CE4766F638	47M SMS 16V M FM5 TP5
		C525	0CE4766F638	47M SMS 16V M FM5 TP5
		C526	0CN6820F668	6800P 16V M X TA26
		C527	0CN1040K948	0.1M 50V Z F TA26
		C528	0CN1020K518	1000P 50V KB TA26
		C529	0CN6820F668	6800P 16V M X TA26
		C530	0CN1040K948	0.1M 50V Z F TA26
		C531	0CN1020K518	1000P 50V KB TA26
		C532	0CE4766F638	47M SMS 16V M FM5 TP5
		C533	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		C534	0CN1040K948	0.1M 50V Z F TA26
		C535	0CN1040K948	0.1M 50V Z F TA26
		C536	0CE2266F638	22M SMS 16V M FM5 TP5
		C537	0CN1030F678	0.01M 16V M Y TA26
		C538	0CN1030F678	0.01M 16V M Y TA26
		C539	0CK3320K515	3300P 50V KB TS
		C540	0CK3320K515	3300P 50V KB TS
		C541	0CK3320K515	3300P 50V KB TS
		C542	0CE4766F638	47M SMS 16V M FM5 TP5
		C544	0CE4766F638	47M SMS 16V M FM5 TP5
		C545	0CN1040K948	0.1M 50V Z F TA26
		C546	0CN1040K948	0.1M 50V Z F TA26
		C547	0CN1030F678	0.01M 16V M Y TA26
		C548	0CN2710K518	270P 50V KB TA26
		C549	0CQ8221N409	0.0082U 100V J POLY TP
		C550	0CN1020K518	1000P 50V KB TA26
		C551	0CN2230H948	0.022M 25V Z F TA26
		C552	0CE4766F638	47M SMS 16V M FM5 TP5
		C553	0CC1000K015	10P 50V C NPO TS
		C554	0CC1000K015	10P 50V C NPO TS
		C555	0CN1040K948	0.1M 50V Z F TA26
		C556	0CN2230H948	0.022M 25V Z F TA26
		C557	0CE4766F638	47M SMS 16V M FM5 TP5
		C558	0CN4710K518	470P 50V KB TA26
		C559	0CN4710K518	470P 50V KB TA26
		C560	0CN1040K948	0.1M 50V Z F TA26
		C561	0CN1040K948	0.1M 50V Z F TA26
		C562	0CQ4721N409	0.0047U 100V J POLY TP
		C563	0CX1200K408	12P 50V JSL TA26
		C564	0CN1030F678	0.01M 16V M Y TA26
		C565	0CN1040K948	0.1M 50V Z F TA26
		C566	0CN1030F678	0.01M 16V M Y TA26
		C567	0CN1030F678	0.01M 16V M Y TA26
		C568	0CN1030F678	0.01M 16V M Y TA26
		C569	0CX5600K408	56P 50V J SL TA26
		C601	0CN1040K948	0.1M 50V Z F TA26
		C602	0CN1040K948	0.1M 50V Z F TA26
		C603	0CX1800K408	18P 50V JSL TA26
		C604	0CN1040K948	0.1M 50V Z F TA26
		C605	0CE4754H638	4.7M SRA 25V M FM5 TP(5)
		C606	0CE4766F638	47M SMS 16V M FM5 TP5
		C607	0CE2264F638	22M SRA 16V M FM5 TP(5)
		C608	0CN1020K518	1000P 50V KB TA26
		C609	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C610	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C611	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
		C612	0CN1010K518	100P 50V KB TA26
		C613	0CN1040K948	0.1M 50V Z F TA26
		C614	0CN1040K948	0.1M 50V Z F TA26
		C615	0CN1020K518	1000P 50V KB TA26
		C616	0CN1040K948	0.1M 50V Z F TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C703	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		C704	0CN1040K948	0.1M 50V Z F TA26
		C705	0CN1040K948	0.1M 50V Z F TA26
		C707	0CN2230H948	0.022M 25V Z F TA26
		C709	0CN2230H948	0.022M 25V Z F TA26
		C710	0CE1074F638	100U SRA 16V M FM5 TP(5)
		C711	0CN2230H948	0.022M 25V Z F TA26
		C712	0CN1040K948	0.1M 50V Z F TA26
		C713	0CN1040K948	0.1M 50V Z F TA26
		C714	0CC1200K415	12P 50V J NPO TS
		C716	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
		C717	0CN4730K948	0.047M 50V Z F TA26
		C718	0CE4766F638	47M SMS 16V M FM5 TP5
		C719	0CN2230H948	0.022M 25V Z F TA26
		C720	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
		C721	0CN6810K518	680P 50V KB TA26
		C722	0CE1074F638	100U SRA 16V M FM5 TP(5)
		C724	0CN2230H948	0.022M 25V Z F TA26
		C725	0CX4700K408	47P 50V JSL TA26
		C726	0CE4766F638	47M SMS 16V M FM5 TP5
		C727	0CN2230H948	0.022M 25V Z F TA26
		C728	0CX2200K408	22P 50V J SL TP26
		C729	0CN2230H948	0.022M 25V Z F TA26
		C730	0CE4766F638	47M SMS 16V M FM5 TP5
		C740	0CE2274F638	220M SRA 16V M FM5 TP(5)
		C741	0CC2700K415	27P 50V J NPO TP
		C742	0CE4766F638	47M SMS 16V M FM5 TP5
		C743	0CN2230H948	0.022M 25V Z F TA26
		C744	0CE4766F638	47M SMS 16V M FM5 TP5
		C745	0CN1040K948	0.1M 50V Z F TA26
		C747	0CE4766F638	47M SMS 16V M FM5 TP5
		C748	0CN1040K948	0.1M 50V Z F TA26
		C749	0CN3910K518	390P 50V KB TA26
		C750	0CN3910K518	390P 50V KB TA26
		C751	0CQ6821N409	0.0068U 100V J POLY TP
		C752	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C753	0CQ6821N409	0.0068U 100V J POLY TP
		C754	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C756	0CN2230H948	0.022M 25V Z F TA26
		C757	0CE4766F638	47M SMS 16V M FM5 TP5
		C759	0CE3354K638	3.3M SRA 50V M FM5 TP(5)
		C760	0CN1040K948	0.1M 50V Z F TA26
		C761	0CN4710K518	470P 50V KB TA26
		C762	0CN4710K518	470P 50V KB TA26
		C763	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C764	0CN1040K948	0.1M 50V Z F TA26
		C765	0CN1030F678	0.01M 16V M Y TA26
		C766	0CC1200K415	12P 50V J NPO TS
		C767	0CC1200K415	12P 50V J NPO TS
		C768	0CE4766F638	47M SMS 16V M FM5 TP5
		C769	0CN2230H948	0.022M 25V Z F TA26
		C770	0CE4766F638	47M SMS 16V M FM5 TP5
		C772	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
		C773	0CN2230H948	0.022M 25V Z F TA26
		C774	0CN1040K948	0.1M 50V Z F TA26
		C775	0CN1040K948	0.1M 50V Z F TA26
		C776	0CN1040K948	0.1M 50V Z F TA26
		C779	0CE2274F638	220M SRA 16V M FM5 TP(5)
		C780	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C781	0CE4766F638	47M SMS 16V M FM5 TP5
		C782	0CN1040K948	0.1M 50V Z F TA26
		C785	0CE4766F638	47M SMS 16V M FM5 TP5



S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C801	OCE4766F638	47M SMS 16V M FM5 TP5
		C802	OCN1030F678	0.01M 16V M Y TA26
		C803	OCN1040K948	0.1M 50V Z F TA26
		C804	OCX6800K408	68P 50V J SL TA26
		C805	OCN1030F678	0.01M 16V M Y TA26
		C808	OCX6800K408	68P 50V J SL TA26
		C813	OCN1030F678	0.01M 16V M Y TA26
		C814	OCE4766F638	47M SMS 16V M FM5 TP5
		C815	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C816	OCQ1021N409	0.001U 100V J POLY TP
		C817	OCQ3321N409	0.0033U 100V J POLY TP
		C818	OCQ3321N409	0.0033U 100V J POLY TP
		C819	OCQ6831N409	0.068U 100V J POLY TP
		C820	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C821	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C822	OCN1010K518	100P 50V K B TA26
		C823	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C824	OCE4766F638	47M SMS 16V M FM5 TP5
		C825	OCN1030F678	0.01M 16V M Y TA26
		C826	OCE1076F638	100M SMS 16V M FM5 TP(5)
		C827	OCE4766F638	47M SMS 16V M FM5 TP5
		C828	OCX3300K408	33P 50V J SL TA26
		C829	OCX2200K408	22P 50V J SL TP26
		C830	OCE1076F638	100M SMS 16V M FM5 TP(5)
		C831	OCX3900K408	39P 50V J SL TA26
		C832	OCN1030F678	0.01M 16V M Y TA26
		C833	OCE1076F638	100M SMS 16V M FM5 TP(5)
		C835	OCE4775C638	470M SR 6.3V M FM5 TP(5)
		C836	OCN1010K518	100P 50V K B TA26
		C837	OCN1000K015	10P 50V C NP0 TS
		C838	OCN1200K415	12P 50V J NP0 TS
		C839	OCN1040K948	0.1M 50V Z F TA26
		C840	OCN1030F678	0.01M 16V M Y TA26
		C843	OCE1076F638	100M SMS 16V M FM5 TP(5)
		C845	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C846	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C847	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C848	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C849	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C850	OCN1030F678	0.01M 16V M Y TA26
		C851	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C852	OCN1020K518	1000P 50V K B TA26
		C853	OCN1020K518	1000P 50V K B TA26
		C854	OCN1020K518	1000P 50V K B TA26
		C856	OCN1020K518	1000P 50V K B TA26
		C859	OCN1020K518	1000P 50V K B TA26
		C860	OCN1020K518	1000P 50V K B TA26
		C864	OCN1020K518	1000P 50V K B TA26
		C871	OCN1020K518	1000P 50V K B TA26
		C874	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C875	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C876	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C877	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C878	OCE2264F638	22M SRA 16V M FM5 TP(5)
		C879	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C880	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C881	OCE2264F638	22M SRA 16V M FM5 TP(5)
		C882	OCE4766F638	47M SMS 16V M FM5 TP5
		C883	OCN1030F678	0.01M 16V M Y TA26
		C884	OCN1010K518	100P 50V K B TA26
		C885	OCN1010K518	100P 50V K B TA26
		C886	OCN1010K518	100P 50V K B TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C890	OCX6800K408	68P 50V J SL TA26
		C892	OCN1040K948	0.1M 50V Z F TA26
		C901	0CH1223K516	0.022U 50V K B 2.0X1.2 R/TP
		C903	0CH1103K516	0.01U 50V K B 2.0X1.25 R/TP
		C904	0CH4101K416	100P 50V J NP0 2.0*1.25 R/TP
		C905	0CH4270K416	27P 50V J COG 2.0X1.2 R/TP
		C906	0CH4561K416	560PF 50V J NP0 2012 R/TP
		C907	0CH4270K416	27P 50V J COG 2.0X1.2 R/TP
		C908	OCE1074F638	100U SRA 16V M FM5 TP(5)
		C909	OCN1030F678	0.01M 16V M Y TA26
		C910	OCE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C911	OCN1030F678	0.01M 16V M Y TA26
		C912	0CH4121K416	120P 50V J NP0 2.0X1.2 R/TP
		C914	OCE1044K638	0.1M SRA 50V M FM5 TP(5)
		C915	0CH4330K416	33P 50V J C 2.0X1.2 R/TP
		C916	0CH1223K516	0.022U 50V K B 2.0X1.2 R/TP
		C917	OCN2230H948	0.022M 25V Z F TA26
		C918	OCE2244K638	0.22M SRA 50V M FM5 TP(5)
		C919	0CH4390K416	39P 50V J COG 2.0X1.2 R/TP
		C920	0CH4390K416	39P 50V J COG 2.0X1.2 R/TP
		C921	OCE2244K638	0.22M SRA 50V M FM5 TP(5)
		C922	0CH1223K516	0.022U 50V K B 2.0X1.2 R/TP
		C923	0CH1223K516	0.022U 50V K B 2.0X1.2 R/TP
		C924	OCE2244K638	0.22M SRA 50V M FM5 TP(5)
		C925	0CH4390K416	39P 50V J COG 2.0X1.2 R/TP
		C926	0CH4390K416	39P 50V J COG 2.0X1.2 R/TP
		C927	OCE2244K638	0.22M SRA 50V M FM5 TP(5)
		C928	0CH1223K516	0.022U 50V K B 2.0X1.2 R/TP
		C929	OCE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C930	OCN1030F678	0.01M 16V M Y TA26
		C931	0CH4101K416	100P 50V J NP0 2.0*1.25 R/TP
		C932	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C933	OCN1020K518	1000P 50V K B TA26
		C934	0CH4101K416	100P 50V J NP0 2.0*1.25 R/TP
		C935	0CH4101K416	100P 50V J NP0 2.0*1.25 R/TP
		C936	0CH4102K416	1000P 50V J X7R 2.0X1.25
		C937	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C938	OCE1074F638	100U SRA 16V M FM5 TP(5)
		C939	OCN1030F678	0.01M 16V M Y TA26
		C940	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C941	OCN1030F678	0.01M 16V M Y TA26
		C942	OCE1074F638	100U SRA 16V M FM5 TP(5)
		C943	0CH1103K516	0.01U 50V K B 2.0X1.25 R/TP
		C944	0CH1103K516	0.01U 50V K B 2.0X1.25 R/TP
		C945	0CH4560K416	56P 50V J NP0 2.0X1.25 R/TP
		C950	0CH1223K516	0.022U 50V K B 2.0X1.2 R/TP
	OR	CP01	624-088A	KNB1530 AC250V/0.1UF ISKARA
		CP01	624-088B	ECQU2A104MVA AC250/0.1UF MATSU
		CP03	624-066E	AC CON 472/400V,E,AA(S/S)
		CP04	624-066E	AC CON 472/400V,E,AA(S/S)
		CP05	624-084H	ES-2230-100-400-M SMPS RI-C
		CP06	OCE107BH638	100U KME 25V M FM5 TP5
		CP07	OCE107BH638	100U KME 25V M FM5 TP5
		CP08	624-087J	HIGH-VOL 102PF/1KV CERAMIC
		CP09	OCQ1021N409	0.001U 100V J POLY TP
		CP10	OCE1087H638	1000UF SXE 25V M FM5 TP5
		CP11	624-084E	HER-1320-1000-25-M SMPS RI-C
	OR	CP11	624-085E	CE 1000UF/25V KME (SMPS)
	OR	CP12	624-083E	1000/10V KME (SMPS) CE
		CP12	624-084N	HER-1016-1000-10-M SMPS RI-C
		CP13	OCE1086D638	1000UF SMS 10V M FM5 TP5
		CP16	OCE1087H638	1000UF SXE 25V M FM5 TP5



S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
	OR	CP17	624-084E	HER-1320-1000-25-M SMPS RI-C
		CP17	624-085E	CE 1000UF/25V KME (SMPS)
		CP20	0CE1076K638	100M SMS 50V M FM5 TP(5)
		CP21	0CE1086D638	1000UF SMS 10V M FM5 TP5
		CP22	0CE4766K638	47M SMS 50V M FM5 TP
		CP23	0CC2210K405	220P 50V JSL TP
		CP27	0CQ2731N409	0.027U 100V J POLY TP
		CP32	0CE4766K638	47M SMS 50V M FM5 TP
		CP36	624-086B	AC-CON 103/400V,Z,NU(N/K)
		CP38	624-066A	AC CON 220PF/400V,B,AA(S/S)
		CP39	624-066A	AC CON 220PF/400V,B,AA(S/S)

### DIODE

	BDP01	0DD160000DA	S1WBA60(1A 600V) SHIDENKEN
	D001	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D002	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D202	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D203	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D204	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D205	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D206	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D207	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D208	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D209	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D211	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D212	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D213	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D219	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D220	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D228	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D230	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D233	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D234	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D235	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D301	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D302	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D307	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D308	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D309	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D3A0	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D3A1	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D3A2	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D3A3	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D401	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D402	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D403	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D405	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D501	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D502	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D503	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D504	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D505	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D506	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D507	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D508	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D703	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
	D801	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
	D902	0DD193009AA	DIODE CHIP KDS193-T1(F3) KEC
	DP03	0DD010009AD	EG01ZW(R-FORM 5MM) TP SANKEN
	DP04	0DD010009AC	EU01W(R-FORM) TP SANKEN
	DP05	0DD010009AC	EU01W(R-FORM) TP SANKEN
	DP06	0DD400000AH	RU4YX SANKEN

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		DP07	0DD207000AA	2A07 2A RECTIFIERS(T/S)DELTA
		DP08	0DD140000BA	FMBG14L SANKEN
		DP09	0DD120000BC	FMPG12S SANKEN
		DP10	0DD010009AC	EU01W(R-FORM) TP SANKEN
		DP11	0DD010009AC	EU01W(R-FORM) TP SANKEN
		DP12	0DD010009AC	EU01W(R-FORM) TP SANKEN

### DISPLAY TUBE

	DG601	514-031A	13BT-133GK DD1 FUTABA
	LM601	514-505C	LEVEL METER KI-212G2(15MM)ROHM

### DELAY LINE

	DL3A0	617-011A	MS-31PC (KSS)
--	-------	----------	---------------

### FUSE

	FP01	585-011C	T 1.6A 250V S506
--	------	----------	------------------

### FILTER

	FL301	616-064D	L/C CL00047A 1.5M LPF S/S
	FL302	616-053A	HPF 1.4MHZ (DAE SHIN)
	FL3A0	616-234C	A285TCHS-K5315 DD1P K-TOKO
	FL3A1	616-234A	A285TCHS-K5305 CAN-COIL DD1P
	FL3A2	616-234B	A285TCHS-K5306 DD1P K-TOKO
	FL3A4	616-126G	L/C BPF CB0067 4.43BPF S/S
	FL401	616-405B	F-K5D9568A 1.8M SAMMI C900P
	FL402	616-405A	F-K5D9567A 1.4M SAMMI C900P
	FL403	616-069C	LPF 12KHZ(JH-1058) SAMMI
	FL4A0	616-167A	1.7MBPF TH328BTLS-K5318 K-TOKO
	FL4A1	616-154A	1.5BPF TH328BTLS-K5317K-TOKO D
	FL701	616-069C	LPF 12KHZ(JH-1058) SAMMI
	FL702	616-069C	LPF 12KHZ(JH-1058) SAMMI
	FLP01	616-145A	LINE FILTER SQE TYPE 33MH(BUJ)
	Z701	616-098A	SAW OFWG3203 SIEMENS
	Z703	616-036E	TRAP TPS5.74MB MURATA
	Z704	616-036B	TRAP TPS5.5MB MURA
	Z705	616-714A	MKT40MA100P MURATA

### IC

	IC001	0IH118191A	HA118191NT PRE-AMP DIP
	IC201	0IM1381850Q	M38185ME-134FP(SY+TI) R-DV10S
	IC202	0INA241600A	NM24C16N(EEPROM.16K) OC3600
	IC203	0IMT523000B	PST-523G/T(3.3V) LOW
	IC204	0IH1497560A	HD49756NT(SERVO)
	IC205	0IRH704800A	BA7048N(ENVELOPE-DETECT)
	IC206	0IGS744500A	GL7445 (MOTOR DRIV-1CH) GSS
	IC207	0ISM564900A	SDA5649 (VPS+PDC)
	IC301	0IH118201A	HA118201CF Y/C PAL/MULTI
	IC303	0IKK746063A	MSM7460-63RS CCD(PAL) DIP
	IC3A0	0IH118172A	HA118172F(Y/C 8MM)HARD TRAY
	IC3A1	0ISO120300A	CXA1203M(8MM PAL JOG)SOP-24P-L
	IC3A2	0IKK740300A	MSM7403MS(2H CCD)FLAT KINSEKI
	IC401	0IRH779000A	BA7790LS(AUDIO NORMAL)
	IC402	0ITO881300A	TA8813AN(HI-FI MAIN PAL)
	IC403	0ISG642000A	TEA6420 S/W IC DIP
	IC404	0ISA722200A	LA7222 (1280 AUDIO)
	IC4A0	0IH118276A	HA118276F
	IC501	0ISO807240S	CXP80724-345Q(SY+SE)R-DV10S
	IC502	0IMT523000C	PST-523D/T
	IC503	0ISA183600A	LB1836M-TEL LOADING MOT 1K/TP

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		IC504	0ISO112700A	CXA1127M-T6 CAP-M DRIV 30SOP
		IC505	0IGS740600A	GL7406 (MOTOR DRIV) TAPING
		IC506	0ISO151200A	CXA1512M
		IC507	0IGS358000E	GL358D (T&R) OP AMP 2.5K/TP
		IC508	0IEX108230A	XR-10823(ATF)QFP32
		IC601	0INE163110A	UPD16311GC-AB6 FIP DRIV 52PQFP
		IC602	0IRH152180B	BA15218(HEAD-PHONE AMP)DIP
		IC701	0IPH980000A	TDA9800 VIF PLL DEM & FM DET
		IC702	0ITF444500B	TDA4445B(SIF+AM DET) OC3600
		IC704	0IIT341000A	MSP3410(NICAM+G2) OC3600
		IC801	0IMI350100M	M35010-110SP(OSD)BF900P/3600H
		IC802	0ISG640000A	STV6400 S/W IC DIP
		IC803	0JIR222900A	NJM2229S SYNC SEPA (SIP PACK)
		IC805	0JIR224900A	NJM2249L S/W (8 PIN SIP)
		IC806	0IGS324000A	GL324 (QUAD PUPLE OP AMP)
		IC901	0IH118019A	HA118019NT(PRE-AMP 4HD)
		IC902	0IRH774000A	BA7740S (PRE-AMP HI-FI)
		ICP01	0ISK670700B	STR/S6707(LF.953) 9P (R5,R6)
		ICP03	0IKE431000A	KIA431

**JACK**

		JK601	572-055A	MIC HSJ1406-01-010
--	--	-------	----------	--------------------

**COIL**

		BD701	636-010F	BEAD,BL01R1-A62T5,MURATA TAPIN
		BD801	0LA0101K018	1.0M K 2.3X3.4 L5 TP
		BD802	636-010F	BEAD,BL01R1-A62T5,MURATA TAPIN
		L001	0LR1000K035	100M K 6X6 L5 TP
		L002	0LR1000K035	100M K 6X6 L5 TP
		L003	0LR8200K035	820M K 6X6 L5 TP
		L004	0LR3300K035	330M K 6X6 L5 TP
		L005	0LA1800K018	180M K 2.3X3.4 L5 TP
		L006	0LA0222K018	22M K 2.3X3.4 L5 TP
		L007	0LA0392K018	39M K 2.3X3.4 L5 TP
		L008	0LA0332K018	33M K 2.3X3.4 L5 TP
		L009	0LA0222K018	22M K 2.3X3.4 L5 TP
		L010	0LR1000K035	100M K 6X6 L5 TP
		L011	0LA0102K018	10M K 2.3X3.4 L5 TP
		L012	0LA0332K018	33M K 2.3X3.4 L5 TP
		L013	0LA0222K018	22M K 2.3X3.4 L5 TP
		L014	0LA0222K018	22M K 2.3X3.4 L5 TP
		L015	0LR1000K035	100M K 6X6 L5 TP
		L201	0LR1000K035	100M K 6X6 L5 TP
		L203	0LR1200K035	120M K 6X6 L5 TP
		L204	0LR1000K035	100M K 6X6 L5 TP
		L205	0LR1000K035	100M K 6X6 L5 TP
		L206	0LR1000K035	100M K 6X6 L5 TP
		L207	0LR1000K035	100M K 6X6 L5 TP
		L208	0LA0472K018	47M K 2.3X3.4 L5 TP
		L210	0LR1000K035	100M K 6X6 L5 TP
		L211	0LR1000K035	100M K 6X6 L5 TP
		L212	0LR1000K035	100M K 6X6 L5 TP
		L302	0LA1500K018	150M K 2.3X3.4 L5 TP
		L307	0LR1000K035	100M K 6X6 L5 TP
		L308	0LR1000K035	100M K 6X6 L5 TP
		L311	0LR1000K035	100M K 6X6 L5 TP
		L312	0LA0682K018	68M K 2.3X3.4 L5 TP
		L313	0LR1000K035	100M K 6X6 L5 TP
		L314	0LA0822K018	82M K 2.3X3.4 L5 TP
		L315	0LR1000K035	100M K 6X6 L5 TP
		L316	0LR3900K035	390M K 6X6 L5 TP

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		L317	0LA0152K018	15M K 2.3X3.4 L5 TP
		L318	0LA0102K018	10M K 2.3X3.4 L5 TP
		L319	0LR1000K035	100M K 6X6 L5 TP
		L321	0LA2200K018	220M K 2.3X3.4 L5 TP
		L322	0LA0392K018	39M K 2.3X3.4 L5 TP
		L325	0LR1000K035	100M K 6X6 L5 TP
		L326	0LA0272K018	27M K 2.3X3.4 L5 TP
		L328	0LA0472K018	47M K 2.3X3.4 L5 TP
		L329	0LA0102K018	10M K 2.3X3.4 L5 TP
		L331	0LA0682K018	68M K 2.3X3.4 L5 TP
		L333	0LA0122K018	12M K 2.3X3.4 L5 TP
		L334	0LR1000K035	100M K 6X6 L5 TP
		L3A0	0LR1000K035	100M K 6X6 L5 TP
		L3A1	0LR0332K035	33M K 6X6 L5 TP
		L3A2	0LA1800K018	180M K 2.3X3.4 L5 TP
		L3A3	0LA0102K018	10M K 2.3X3.4 L5 TP
		L3A4	0LA0222K018	22M K 2.3X3.4 L5 TP
		L3A5	0LR1000K035	100M K 6X6 L5 TP
		L3A6	0LR1000K035	100M K 6X6 L5 TP
		L3A7	0LR1000K035	100M K 6X6 L5 TP
		L3A8	0LR1000K035	100M K 6X6 L5 TP
		L3A9	0LA0152K018	15M K 2.3X3.4 L5 TP
		L3B0	0LR1000K035	100M K 6X6 L5 TP
		L3B1	0LR1000K035	100M K 6X6 L5 TP
		L3B2	0LA0682K018	68M K 2.3X3.4 L5 TP
		L3B3	0LR3300K035	330M K 6X6 L5 TP
		L3B4	0LR8200K035	820M K 6X6 L5 TP
		L401	0LR1000K035	100M K 6X6 L5 TP
		L402	0LR1000K035	100M K 6X6 L5 TP
		L403	0LR1000K035	100M K 6X6 L5 TP
		L404	0LR1000K035	100M K 6X6 L5 TP
		L405	0LR1000K035	100M K 6X6 L5 TP
		L406	0LR1502J045	0.015H J 6X7 L5 TP
		L407	0LR1000K035	100M K 6X6 L5 TP
		L408	0LR1000K035	100M K 6X6 L5 TP
		L409	0LR1000K035	100M K 6X6 L5 TP
		L4A0	0LR1000K035	100M K 6X6 L5 TP
		L501	0LR1000K035	100M K 6X6 L5 TP
		L502	0LR1000K035	100M K 6X6 L5 TP
		L503	0LR1000K035	100M K 6X6 L5 TP
		L504	0LR1000K035	100M K 6X6 L5 TP
		L505	0LR1000K035	100M K 6X6 L5 TP
		L506	0LR1000K035	100M K 6X6 L5 TP
		L507	0LR1000K035	100M K 6X6 L5 TP
		L508	0LR1000K035	100M K 6X6 L5 TP
		L509	0LA1800K018	180M K 2.3X3.4 L5 TP
		L510	0LR820J025	820UH 5% 4X5 TR5
		L511	0LR1000K035	100M K 6X6 L5 TP
		L512	0LR1000K035	100M K 6X6 L5 TP
		L601	0LA1000K018	100M K 2.3X3.4 L5 TP
		L704	0LA0121K018	1.2M K 2.3X3.4 L5 TP
		L705	0LA0102K018	10M K 2.3X3.4 L5 TP
		L706	0LR1000K035	100M K 6X6 L5 TP
		L707	0LA0332K018	33M K 2.3X3.4 L5 TP
		L708	0LR1000K035	100M K 6X6 L5 TP
		L709	0LR1000K035	100M K 6X6 L5 TP
		L714	0LR1000K035	100M K 6X6 L5 TP
		L715	0LR1000K035	100M K 6X6 L5 TP
		L716	0LR1000K035	100M K 6X6 L5 TP
		L717	0LR1000K035	100M K 6X6 L5 TP
		L718	0LR1000K035	100M K 6X6 L5 TP
		L719	0LR1000K035	100M K 6X6 L5 TP

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		L720	0LR1000K035	100M K 6X6 L5 TP
		L721	0LR1000K035	100M K 6X6 L5 TP
		L801	0LR1000K035	100M K 6X6 L5 TP
		L803	0LR1000K035	100M K 6X6 L5 TP
		L804	0LR1000K035	100M K 6X6 L5 TP
		L805	0LA0332K018	33M K 2.3X3.4 L5 TP
		L806	0LA0122K018	12M K 2.3X3.4 L5 TP
		L807	0LR1000K035	100M K 6X6 L5 TP
		L808	0LA1000K018	100M K 2.3X3.4 L5 TP
		L809	0LA1000K018	100M K 2.3X3.4 L5 TP
		L810	0LA1000K018	100M K 2.3X3.4 L5 TP
		L811	0LA1000K018	100M K 2.3X3.4 L5 TP
		L812	0LA1000K018	100M K 2.3X3.4 L5 TP
		L813	0LA1000K018	100M K 2.3X3.4 L5 TP
		L814	0LA1000K018	100M K 2.3X3.4 L5 TP
		L815	0LA1000K018	100M K 2.3X3.4 L5 TP
		L816	0LR1000K035	100M K 6X6 L5 TP
		L817	0LR1000K035	100M K 6X6 L5 TP
		L818	0LA0222K018	22M K 2.3X3.4 L5 TP
		L819	0LA0222K018	22M K 2.3X3.4 L5 TP
		L820	0LA0222K018	22M K 2.3X3.4 L5 TP
		L8C1	0LA0101K018	1.0M K 2.3X3.4 L5 TP
		L901	0LR1000K035	100M K 6X6 L5 TP
		L902	0LA0681K018	6.8M K 2.3X3.4 L5 TP
		L903	0LA0181K018	1.8M K 2.3X3.4 L5 TP
		L904	0LR1000K035	100M K 6X6 L5 TP
		L905	0LR1000K035	100M K 6X6 L5 TP
		L906	0LR1000K035	100M K 6X6 L5 TP
		L907	0LR3300K035	330M K 6X6 L5 TP
		LP01	636-004C	BEAD CORE BFS3550R2FD8,R T/P
		LP02	636-004C	BEAD CORE BFS3550R2FD8,R T/P
		LP03	633-088A	SC-20M CHOKE,COIL
		LP04	633-088A	SC-20M CHOKE,COIL
		LP06	633-088A	SC-20M CHOKE,COIL
		T401	633-032C	BIAS-OSC(MISUMI) 70KHZ
		T402	633-032C	BIAS-OSC(MISUMI) 70KHZ
		T701	633-085A	V-COIL 2920N-K5592Z 77.8 TOKO
		T702	633-021C	PIF(D/S)
<b>LED</b>				
		LD601	0DL112000AK	DL-11S2GNS(SU,G,03,SM3411) KOC
		LD602	0DL112000AK	DL-11S2GNS(SU,G,03,SM3411) KOC
		LD6A1	0DL112000AK	DL-11S2GNS(SU,G,03,SM3411) KOC
		LD6A2	0DL112000AK	DL-11S2GNS(SU,G,03,SM3411) KOC
<b>MODULATOR</b>				
		MD701	592-808A	MCB8-UG3630 PAL B/G WO ATT
<b>CIRCUIT BOARD ASSEMBLY</b>				
		PBIO0	6871R-0252A	I/O BOARD (2NDDD1S)
		PBJT0	515-908B	JUNCTION 2 (G/S)
		PBM00	6871R-0245D	VHS MAIN (DV13P 3GL1)
		PBT00	6871R-0248A	TIMER 2NDDD1S
<b>TRANSFORMER</b>				
		PTP01	642-019A	S/W TRANS EER3530(SUPER PAL)
<b>TRANSISTOR</b>				
		Q001	0TR319909AF	KTC3199-BL MINI TP KEC

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		Q002	0TR319909AF	KTC3199-BL MINI TP KEC
		Q003	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q005	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q006	0TR126709AC	KTA1267-GR MINI TP KEC
		Q007	0TR319909AF	KTC3199-BL MINI TP KEC
		Q008	0TR319909AF	KTC3199-BL MINI TP KEC
		Q009	0TR319909AF	KTC3199-BL MINI TP KEC
		Q010	0TR319709AC	KTC3197 (KTC388A) TP KEC
		Q011	0TR319909AF	KTC3199-BL MINI TP KEC
		Q012	0TR126709AC	KTA1267-GR MINI TP KEC
		Q013	0TR319909AF	KTC3199-BL MINI TP KEC
		Q014	0TR126709AC	KTA1267-GR MINI TP KEC
		Q015	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q201	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q202	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q203	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q204	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q205	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q206	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q207	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		Q208	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q209	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q210	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q211	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q212	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q213	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q215	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q217	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q218	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q219	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q220	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q221	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q222	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		Q223	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q224	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		Q301	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q302	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q304	0TR126709AC	KTA1267-GR MINI TP KEC
		Q305	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q306	0TR126709AC	KTA1267-GR MINI TP KEC
		Q307	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q308	0TR126709AC	KTA1267-GR MINI TP KEC
		Q309	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q310	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q311	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q312	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q313	0TR126709AC	KTA1267-GR MINI TP KEC
		Q315	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q320	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q323	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q324	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q325	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q326	0TR126709AC	KTA1267-GR MINI TP KEC
		Q327	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q328	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q329	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q3A0	0TR319909AF	KTC3199-BL MINI TP KEC
		Q3A1	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q3A2	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q3A4	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		Q3A5	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q3A7	0TR103009AE	KRC103M-TP (KRC1203) KEC

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		Q3A8	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q3A9	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q3B0	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q3B1	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q3B2	0TR319909AF	KTC3199-BL MINI TP KEC
		Q3B3	0TR126709AC	KTA1267-GR MINI TP KEC
		Q3B4	0TR319909AF	KTC3199-BL MINI TP KEC
		Q3E1	0TR319909AF	KTC3199-BL MINI TP KEC
		Q401	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q402	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q403	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q404	0TR126709AC	KTA1267-GR MINI TP KEC
		Q405	0TR126709AC	KTA1267-GR MINI TP KEC
		Q406	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q407	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q408	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q409	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q410	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q411	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q412	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q413	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q414	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q415	0TR126709AC	KTA1267-GR MINI TP KEC
		Q416	0TR126709AC	KTA1267-GR MINI TP KEC
		Q417	0TR126709AC	KTA1267-GR MINI TP KEC
		Q418	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q419	0TR126709AC	KTA1267-GR MINI TP KEC
		Q420	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q421	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q4A0	0TR319909AF	KTC3199-BL MINI TP KEC
		Q4A1	0TR319909AF	KTC3199-BL MINI TP KEC
		Q4A2	0TR319909AF	KTC3199-BL MINI TP KEC
		Q4A3	0TR319909AF	KTC3199-BL MINI TP KEC
		Q4A4	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q4A5	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q4A6	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q502	0TR223609AB	KTC2236A-Y-KTC3205Y TP KEC
		Q503	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q504	0TR205800AA	KTD2058-0 KEC
		Q505	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q506	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q507	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q508	0TR205800AA	KTD2058-0 KEC
		Q509	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q510	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q601	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q6B1	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q701	0TR319709AC	KTC3197 (KTC388A) TP KEC
		Q703	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q709	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q710	0TR126709AC	KTA1267-GR MINI TP KEC
		Q712	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q801	0TR126709AC	KTA1267-GR MINI TP KEC
		Q802	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q803	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q804	0TR126709AC	KTA1267-GR MINI TP KEC
		Q805	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q806	0TR319909AF	KTC3199-BL MINI TP KEC
		Q807	0TR319909AF	KTC3199-BL MINI TP KEC
		Q808	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q809	0TR126709AC	KTA1267-GR MINI TP KEC
		Q810	0TR319909AF	KTC3199-BL MINI TP KEC

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		Q811	0TR319909AF	KTC3199-BL MINI TP KEC
		Q812	0TR319909AF	KTC3199-BL MINI TP KEC
		Q814	0TR319909AF	KTC3199-BL MINI TP KEC
		Q902	0TR103009AA	CHIP KRC103S-T1(NC)22-22 KEC
		Q903	0TR103009AA	CHIP KRC103S-T1(NC)22-22 KEC
		Q904	0TR150409AC	KTA1504-GR-T1(ASG) CHIP KEC
		Q905	0TR150409AC	KTA1504-GR-T1(ASG) CHIP KEC
		Q906	0TR103009AA	CHIP KRC103S-T1(NC)22-22 KEC
		Q907	0TR387609AA	CHIP KTC3876-0-T1(WO) KEC
		Q908	0TR103009AA	CHIP KRC103S-T1(NC)22-22 KEC
<b>SENSOR</b>				
		ICP04	657-060C	CQY80NG PHOTO-COUPLER TELEFON



**CAUTION:** The \* marks in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the SAFETY PRECAUTIONS and SERVICING PRECAUTIONS in the manual. Do not degrade the safety of the unit through improper servicing.

**Tolerance**

Symbol	C	J	K	M	N	Z	P	A
%	±2	±5	±10	±20	±30	+80 -20	+100 -10	+100 -10

CC, CJ, CK: Capacitor, Ceramic  
CE: Capacitor, Electrolytic  
CQ: Capacitor, Polyester

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
<b>RESISTOR</b>				
		R001	ORD0752F608	75 1/6W 5 TA26
		R002	ORD0752F608	75 1/6W 5 TA26
		R003	ORD0562F608	56 1/6W 5 TA26
		R004	ORD3902F608	39K 1/6W 5 TA26
		R006	ORD8200F608	820 1/6W 5 TA26
		R008	ORD5600F608	560 1/6W 5 TA26
		R009	ORD6800F608	680 1/6W 5 TA26
		R011	ORD1002F608	10K 1/6W 5 TA26
		R012	ORD2702F608	27K 1/6W 5 TA26
		R013	ORD8200F608	820 1/6W 5 TA26
		R014	ORD2202F608	22K 1/6W 5 TA26
		R015	ORD2202F608	22K 1/6W 5 TA26
		R016	ORD4700F608	470 1/6W 5 TA26
		R017	ORD1501F608	1.5K 1/6W 5 TA26
		R018	ORD4700F608	470 1/6W 5 TA26
		R019	ORD6800F608	680 1/6W 5 TA26
		R020	ORD2200F608	220 1/6W 5 TA26
		R021	ORD8200F608	820 1/6W 5 TA26
		R023	ORD1501F608	1.5K 1/6W 5 TA26
		R024	ORD3301F608	3.3K 1/6W 5 TA26
		R025	ORD1801F608	1.8K 1/6W 5 TA26
		R026	ORD1001F608	1.0K 1/6W 5 TA26
		R027	ORD8200F608	820 1/6W 5 TA26
		R028	ORD2202F608	22K 1/6W 5 TA26
		R029	ORD2202F608	22K 1/6W 5 TA26
		R030	ORD2200F608	220 1/6W 5 TA26
		R032	ORD1201F608	1.2K 1/6W 5 TA26
		R033	ORD6800F608	680 1/6W 5 TA26
		R034	ORD2701F608	2.7K 1/6W 5 TA26
		R035	ORD1002F608	10K 1/6W 5 TA26
		R036	ORD1001F608	1.0K 1/6W 5 TA26
		R037	ORD4700F608	470 1/6W 5 TA26
		R038	ORD1001F608	1.0K 1/6W 5 TA26
		R039	ORD4700F608	470 1/6W 5 TA26
		R041	ORD1001F608	1.0K 1/6W 5 TA26
		R042	ORD5601F608	5.6K 1/6W 5 TA26
		R043	ORD8200F608	820 1/6W 5 TA26
		R201	ORD1001F608	1.0K 1/6W 5 TA26
		R202	ORD4701F608	4.7K 1/6W 5 TA26
		R203	ORD1001F608	1.0K 1/6W 5 TA26
		R204	ORD2702F608	27K 1/6W 5 TA26
		R205	ORD1202F608	12K 1/6W 5 TA26
		R206	ORD1202F608	12K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R207	ORD1002F608	10K 1/6W 5 TA26
		R208	ORD6802F608	68K 1/6W 5 TA26
		R209	ORD3301F608	3.3K 1/6W 5 TA26
		R210	ORD1002F608	10K 1/6W 5 TA26
		R211	ORD3302F608	33K 1/6W 5 TA26
		R212	ORD1002F608	10K 1/6W 5 TA26
		R213	ORD1501F608	1.5K 1/6W 5 TA26
		R214	ORD1502F608	15K 1/6W 5 TA26
		R215	ORD6801F608	6.8K 1/6W 5 TA26
		R216	ORD3901F608	3.9K 1/6W 5 TA26
		R217	ORD2703F608	270K 1/6W 5 TA26
		R218	ORD6802F608	68K 1/6W 5 TA26
		R219	ORD2702F608	27K 1/6W 5 TA26
		R220	ORD8203F608	820K 1/6W 5 TA26
		R221	ORD5603F608	560K 1/6W 5 TA26
		R222	ORD8201F608	8.2K 1/6W 5 TA26
		R223	ORD1501F608	1.5K 1/6W 5 TA26
		R224	ORD1503F608	150K 1/6W 5 TA26
		R225	ORD1503F608	150K 1/6W 5 TA26
		R226	ORD2203F608	220K 1/6W 5 TA26
		R227	ORD6802F608	68K 1/6W 5 TA26
		R228	ORD6802F608	68K 1/6W 5 TA26
		R229	ORD4701F608	4.7K 1/6W 5 TA26
		R230	ORD4701F608	4.7K 1/6W 5 TA26
		R231	ORD5601F608	5.6K 1/6W 5 TA26
		R232	ORD0101F608	1.0 1/6W 5 TA26
		R233	ORD5601F608	5.6K 1/6W 5 TA26
		R234	ORD3902F608	39K 1/6W 5 TA26
		R235	ORD2701F608	2.7K 1/6W 5 TA26
		R236	ORD6803F608	680K 1/6W 5 TA26
		R237	ORD2702F608	27K 1/6W 5 TA26
		R238	ORD4702F608	47K 1/6W 5 TA26
		R239	ORD8201F608	8.2K 1/6W 5 TA26
		R240	ORD1003F608	100K 1/6W 5 TA26
		R241	ORD1503F608	150K 1/6W 5 TA26
		R242	ORD8202F608	82K 1/6W 5 TA26
		R243	ORD1503F608	150K 1/6W 5 TA26
		R244	ORD1003F608	100K 1/6W 5 TA26
		R245	ORD0101F608	1.0 1/6W 5 TA26
		R246	ORD1001F608	1.0K 1/6W 5 TA26
		R247	ORD8203F608	820K 1/6W 5 TA26
		R248	ORD1202F608	12K 1/6W 5 TA26
		R249	ORD1201F608	1.2K 1/6W 5 TA26
		R250	ORD5601F608	5.6K 1/6W 5 TA26
		R251	ORD4700F608	470 1/6W 5 TA26



S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R252	614-011B	PRW 3.3/2W 10MM FORM/BULK SUNG
		R253	ORD1001F608	1.0K 1/6W 5 TA26
		R254	ORD2201F608	2.2K 1/6W 5 TA26
		R255	ORD4701F608	4.7K 1/6W 5 TA26
		R256	ORD1001F608	1.0K 1/6W 5 TA26
		R264	ORD2201F608	2.2K 1/6W 5 TA26
		R267	ORD1004F608	1.0M 1/6W 5 TA26
		R268	ORD1003F608	100K 1/6W 5 TA26
		R269	ORD4704F608	4.7M 1/6W 5 TA26
		R270	ORD1002F608	10K 1/6W 5 TA26
		R271	ORD2201F608	2.2K 1/6W 5 TA26
		R272	ORD4701F608	4.7K 1/6W 5 TA26
		R273	ORD1502F608	15K 1/6W 5 TA26
		R274	ORD4701F608	4.7K 1/6W 5 TA26
		R275	ORD4701F608	4.7K 1/6W 5 TA26
		R276	ORD4701F608	4.7K 1/6W 5 TA26
		R277	ORD2702F608	27K 1/6W 5 TA26
		R278	ORD2702F608	27K 1/6W 5 TA26
		R279	ORD1002F608	10K 1/6W 5 TA26
		R280	ORD1002F608	10K 1/6W 5 TA26
		R281	ORD3302F608	33K 1/6W 5 TA26
		R282	ORD3302F608	33K 1/6W 5 TA26
		R283	ORD6802F608	68K 1/6W 5 TA26
		R284	ORD2201F608	2.2K 1/6W 5 TA26
		R285	ORD2201F608	2.2K 1/6W 5 TA26
		R286	ORD4701F608	4.7K 1/6W 5 TA26
		R287	ORD4701F608	4.7K 1/6W 5 TA26
		R288	ORD4701F608	4.7K 1/6W 5 TA26
		R289	ORD4700F608	470 1/6W 5 TA26
		R290	ORD4701F608	4.7K 1/6W 5 TA26
		R291	ORD4701F608	4.7K 1/6W 5 TA26
		R292	ORD4701F608	4.7K 1/6W 5 TA26
		R293	ORD4701F608	4.7K 1/6W 5 TA26
		R294	ORD4701F608	4.7K 1/6W 5 TA26
		R295	ORD4701F608	4.7K 1/6W 5 TA26
		R296	ORD4701F608	4.7K 1/6W 5 TA26
		R297	ORD1001F608	1.0K 1/6W 5 TA26
		R298	ORD4701F608	4.7K 1/6W 5 TA26
		R299	ORD1001F608	1.0K 1/6W 5 TA26
		R2A1	ORD4701F608	4.7K 1/6W 5 TA26
		R2A2	ORD6802F608	68K 1/6W 5 TA26
		R2A3	ORD6802F608	68K 1/6W 5 TA26
		R2A7	ORD2201F608	2.2K 1/6W 5 TA26
		R2A8	ORD4701F608	4.7K 1/6W 5 TA26
		R2A9	ORD4701F608	4.7K 1/6W 5 TA26
		R2B3	ORD2702F608	27K 1/6W 5 TA26
		R2B5	ORD6802F608	68K 1/6W 5 TA26
		R2B6	ORD6802F608	68K 1/6W 5 TA26
		R2B8	ORD6802F608	68K 1/6W 5 TA26
		R2B9	ORD6802F608	68K 1/6W 5 TA26
		R2C3	ORD4701F608	4.7K 1/6W 5 TA26
		R2C4	ORD4701F608	4.7K 1/6W 5 TA26
		R2D1	ORD1001F608	1.0K 1/6W 5 TA26
		R2D2	ORD1001F608	1.0K 1/6W 5 TA26
		R2D3	ORD2702F608	27K 1/6W 5 TA26
		R2D4	ORD1001F608	1.0K 1/6W 5 TA26
		R2D5	ORD1001F608	1.0K 1/6W 5 TA26
		R2D7	ORD1003F608	100K 1/6W 5 TA26
		R2D8	ORD1004F608	1.0M 1/6W 5 TA26
		R2D9	ORD6801F608	6.8K 1/6W 5 TA26
		R2E1	ORD1204F608	1.2M 1/6W 5 TA26
		R2E2	ORD1204F608	1.2M 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R2E3	ORD6801F608	6.8K 1/6W 5 TA26
		R2E5	ORD3902F608	39K 1/6W 5 TA26
		R2E8	ORD4702F608	47K 1/6W 5 TA26
		R301	ORD4701F608	4.7K 1/6W 5 TA26
		R302	ORD3302F608	33K 1/6W 5 TA26
		R303	ORD1001F608	1.0K 1/6W 5 TA26
		R304	ORD1802F608	18K 1/6W 5 TA26
		R306	ORD3302F608	33K 1/6W 5 TA26
		R307	ORD1802F608	18K 1/6W 5 TA26
		R308	ORD1001F608	1.0K 1/6W 5 TA26
		R309	ORD0102F608	10 1/6W 5 TA26
		R311	ORD2701F608	2.7K 1/6W 5 TA26
		R312	ORD6801F608	6.8K 1/6W 5 TA26
		R313	ORD2200F608	220 1/6W 5 TA26
		R315	ORD4701F608	4.7K 1/6W 5 TA26
		R316	ORD1002F608	10K 1/6W 5 TA26
		R317	ORD1002F608	10K 1/6W 5 TA26
		R318	ORD1001F608	1.0K 1/6W 5 TA26
		R319	ORD1001F608	1.0K 1/6W 5 TA26
		R320	ORD4701F608	4.7K 1/6W 5 TA26
		R321	ORD1001F608	1.0K 1/6W 5 TA26
		R322	ORD7500F608	750 1/6W 5 TA26
		R323	ORD1001F608	1.0K 1/6W 5 TA26
		R324	ORD4702F608	47K 1/6W 5 TA26
		R325	ORD4702F608	47K 1/6W 5 TA26
		R326	ORD1001F608	1.0K 1/6W 5 TA26
		R327	ORD4700F608	470 1/6W 5 TA26
		R328	ORD1802F608	18K 1/6W 5 TA26
		R329	ORD4701F608	4.7K 1/6W 5 TA26
		R331	ORD1201F608	1.2K 1/6W 5 TA26
		R332	ORD1001F608	1.0K 1/6W 5 TA26
		R333	ORD5600F608	560 1/6W 5 TA26
		R334	ORD1001F608	1.0K 1/6W 5 TA26
		R336	ORD1200F608	120 1/6W 5 TA26
		R337	ORD2201F608	2.2K 1/6W 5 TA26
		R340	ORD1501F608	1.5K 1/6W 5 TA26
		R342	ORD2702F608	27K 1/6W 5 TA26
		R343	ORD1501F608	1.5K 1/6W 5 TA26
		R344	ORD2001F608	2.0K 1/6W 5 TA26
		R345	ORD8200F608	820 1/6W 5 TA26
		R346	ORD1801F608	1.8K 1/6W 5 TA26
		R347	ORD8202F608	82K 1/6W 5 TA26
		R350	ORD1201F608	1.2K 1/6W 5 TA26
		R351	ORD1802F608	18K 1/6W 5 TA26
		R352	ORD3302F608	33K 1/6W 5 TA26
		R353	ORD1002F608	10K 1/6W 5 TA26
		R354	ORD1002F608	10K 1/6W 5 TA26
		R355	ORD5601F608	5.6K 1/6W 5 TA26
		R359	ORD1001F608	1.0K 1/6W 5 TA26
		R361	ORD3901F608	3.9K 1/6W 5 TA26
		R362	ORD3301F608	3.3K 1/6W 5 TA26
		R379	ORD2701F608	2.7K 1/6W 5 TA26
		R382	ORD7500F608	750 1/6W 5 TA26
		R383	ORD2201F608	2.2K 1/6W 5 TA26
		R384	ORD2201F608	2.2K 1/6W 5 TA26
		R385	ORD3900F608	390 1/6W 5 TA26
		R386	ORD3900F608	390 1/6W 5 TA26
		R387	ORD1001F608	1.0K 1/6W 5 TA26
		R388	ORD5601F608	5.6K 1/6W 5 TA26
		R389	ORD2201F608	2.2K 1/6W 5 TA26
		R390	ORD1001F608	1.0K 1/6W 5 TA26
		R391	ORD5600F608	560 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R392	ORD3900F608	390 1/6W 5 TA26
		R393	ORD2200F608	220 1/6W 5 TA26
		R395	ORD1201F608	1.2K 1/6W 5 TA26
		R396	ORD1801F608	1.8K 1/6W 5 TA26
		R397	ORD4700F608	470 1/6W 5 TA26
		R398	ORD8200F608	820 1/6W 5 TA26
		R3A1	ORD1802F608	18K 1/6W 5 TA26
		R3A2	ORD1802F608	18K 1/6W 5 TA26
		R3A3	ORD4701F608	4.7K 1/6W 5 TA26
		R3A4	ORD1501F608	1.5K 1/6W 5 TA26
		R3A5	ORD1001F608	1.0K 1/6W 5 TA26
		R3A6	ORD1001F608	1.0K 1/6W 5 TA26
		R3A7	ORD1001F608	1.0K 1/6W 5 TA26
		R3A8	ORD6802F608	68K 1/6W 5 TA26
		R3A9	ORD6802F608	68K 1/6W 5 TA26
		R3B0	ORD6802F608	68K 1/6W 5 TA26
		R3B1	ORD3302F608	33K 1/6W 5 TA26
		R3B2	ORD2700F608	270 1/6W 5 TA26
		R3B3	ORD1001F608	1.0K 1/6W 5 TA26
		R3B4	ORD1004F608	1.0M 1/6W 5 TA26
		R3B5	ORD4700F608	470 1/6W 5 TA26
		R3B6	ORD2700F608	270 1/6W 5 TA26
		R3B7	ORD1802F608	18K 1/6W 5 TA26
		R3B8	ORD1802F608	18K 1/6W 5 TA26
		R3B9	ORD3302F608	33K 1/6W 5 TA26
		R3C0	ORD4701F608	4.7K 1/6W 5 TA26
		R3C1	ORD4701F608	4.7K 1/6W 5 TA26
		R3C2	ORD4701F608	4.7K 1/6W 5 TA26
		R3C3	ORD2201F608	2.2K 1/6W 5 TA26
		R3C4	ORD1001F608	1.0K 1/6W 5 TA26
		R3C6	ORD2201F608	2.2K 1/6W 5 TA26
		R3C7	ORD2201F608	2.2K 1/6W 5 TA26
		R3C9	ORD1002F608	10K 1/6W 5 TA26
		R3E0	ORD5600F608	560 1/6W 5 TA26
		R3E1	ORD1002F608	10K 1/6W 5 TA26
		R3E2	ORD4701F608	4.7K 1/6W 5 TA26
		R3E3	ORD3302F608	33K 1/6W 5 TA26
		R3E4	ORD1003F608	100K 1/6W 5 TA26
		R3E5	ORD2203F608	220K 1/6W 5 TA26
		R3E6	ORD4703F608	470K 1/6W 5 TA26
		R3E7	ORD2201F608	2.2K 1/6W 5 TA26
		R3E8	ORD4700F608	470 1/6W 5 TA26
		R3E9	ORD1003F608	100K 1/6W 5 TA26
		R3F0	ORD1003F608	100K 1/6W 5 TA26
		R3F1	ORD2202F608	22K 1/6W 5 TA26
		R3F2	ORD3301F608	3.3K 1/6W 5 TA26
		R3F3	ORD1801F608	1.8K 1/6W 5 TA26
		R3F4	ORD4700F608	470 1/6W 5 TA26
		R3F5	ORD1200F608	120 1/6W 5 TA26
		R3F6	ORD4700F608	470 1/6W 5 TA26
		R3F7	ORD3301F608	3.3K 1/6W 5 TA26
		R3F8	ORD1002F608	10K 1/6W 5 TA26
		R3F9	ORD1002F608	10K 1/6W 5 TA26
		R3G0	ORD8200F608	820 1/6W 5 TA26
		R3G1	ORD1201F608	1.2K 1/6W 5 TA26
		R3G2	ORD6801F608	6.8K 1/6W 5 TA26
		R3G4	ORD3301F608	3.3K 1/6W 5 TA26
		R3G6	ORD2201F608	2.2K 1/6W 5 TA26
		R3K1	ORD4701F608	4.7K 1/6W 5 TA26
		R3K2	ORD1501F608	1.5K 1/6W 5 TA26
		R3K3	ORD1001F608	1.0K 1/6W 5 TA26
		R3K4	ORD6800F608	680 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R401	ORD1002F608	10K 1/6W 5 TA26
		R402	ORD1002F608	10K 1/6W 5 TA26
		R403	ORD2702F608	27K 1/6W 5 TA26
		R404	ORD1001F608	1.0K 1/6W 5 TA26
		R405	ORD8202F608	82K 1/6W 5 TA26
		R406	ORD2201F608	2.2K 1/6W 5 TA26
		R407	ORD2202F608	22K 1/6W 5 TA26
		R408	ORD2203F608	220K 1/6W 5 TA26
		R409	ORD1201F608	1.2K 1/6W 5 TA26
		R40A	ORD1201F608	1.2K 1/6W 5 TA26
		R40B	ORD1001F608	1.0K 1/6W 5 TA26
		R410	ORD1001F608	1.0K 1/6W 5 TA26
		R411	ORD4700F608	470 1/6W 5 TA26
		R412	ORD1001F608	1.0K 1/6W 5 TA26
		R413	ORD1001F608	1.0K 1/6W 5 TA26
		R414	ORD1201F608	1.2K 1/6W 5 TA26
		R415	ORD2203F608	220K 1/6W 5 TA26
		R416	ORD2202F608	22K 1/6W 5 TA26
		R417	ORD2702F608	27K 1/6W 5 TA26
		R418	ORD1502F608	15K 1/6W 5 TA26
		R419	ORD3303F608	330K 1/6W 5 TA26
		R420	ORD1502F608	15K 1/6W 5 TA26
		R421	ORD1002F608	10K 1/6W 5 TA26
		R422	ORD1001F608	1.0K 1/6W 5 TA26
		R423	ORD3901F608	3.9K 1/6W 5 TA26
		R424	ORD1001F608	1.0K 1/6W 5 TA26
		R425	ORD3901F608	3.9K 1/6W 5 TA26
		R426	ORD1002F608	10K 1/6W 5 TA26
		R427	ORD2201F608	2.2K 1/6W 5 TA26
		R428	ORD2200F608	220 1/6W 5 TA26
		R429	ORD2200F608	220 1/6W 5 TA26
		R430	ORD2201F608	2.2K 1/6W 5 TA26
		R431	ORD2202F608	22K 1/6W 5 TA26
		R432	ORD1802F608	18K 1/6W 5 TA26
		R433	ORD2201F608	2.2K 1/6W 5 TA26
		R434	ORD2202F608	22K 1/6W 5 TA26
		R435	ORD2202F608	22K 1/6W 5 TA26
		R436	ORD5601F608	5.6K 1/6W 5 TA26
		R437	ORD6800F608	680 1/6W 5 TA26
		R438	ORD4703F608	470K 1/6W 5 TA26
		R439	ORD2201F608	2.2K 1/6W 5 TA26
		R440	ORD1802F608	18K 1/6W 5 TA26
		R441	ORD2201F608	2.2K 1/6W 5 TA26
		R442	ORD2202F608	22K 1/6W 5 TA26
		R443	ORD1201F608	1.2K 1/6W 5 TA26
		R444	ORD2701F608	2.7K 1/6W 5 TA26
		R445	ORD1201F608	1.2K 1/6W 5 TA26
		R446	ORD2701F608	2.7K 1/6W 5 TA26
		R447	ORD4700F608	470 1/6W 5 TA26
		R448	ORD1002F608	10K 1/6W 5 TA26
		R449	ORD1002F608	10K 1/6W 5 TA26
		R450	ORD1202F608	12K 1/6W 5 TA26
		R451	ORD0102F608	10 1/6W 5 TA26
		R452	ORD0102F608	10 1/6W 5 TA26
		R453	ORD4702F608	47K 1/6W 5 TA26
		R454	ORD1003F608	100K 1/6W 5 TA26
		R455	ORD3900F608	390 1/6W 5 TA26
		R456	ORD1002F608	10K 1/6W 5 TA26
		R457	ORD2702F608	27K 1/6W 5 TA26
		R458	ORD0472F608	47 1/6W 5 TA26
		R459	ORD0472F608	47 1/6W 5 TA26
		R460	ORD2702F608	27K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R461	ORD2701F608	2.7K 1/6W 5 TA26
		R462	ORD2701F608	2.7K 1/6W 5 TA26
		R463	ORD2202F608	22K 1/6W 5 TA26
		R464	ORD6800F608	680 1/6W 5 TA26
		R465	ORD5602F608	56K 1/6W 5 TA26
		R466	ORD6801F608	6.8K 1/6W 5 TA26
		R467	ORD1001F608	1.0K 1/6W 5 TA26
		R468	ORD1004F608	1.0M 1/6W 5 TA26
		R469	ORD6801F608	6.8K 1/6W 5 TA26
		R470	ORD1202F608	12K 1/6W 5 TA26
		R471	ORD1001F608	1.0K 1/6W 5 TA26
		R472	ORD1500F608	150 1/6W 5 TA26
		R473	ORD0102F608	10 1/6W 5 TA26
		R474	ORD3902F608	39K 1/6W 5 TA26
		R475	ORD6801F608	6.8K 1/6W 5 TA26
		R476	ORD4702F608	47K 1/6W 5 TA26
		R478	ORD4702F608	47K 1/6W 5 TA26
		R479	ORD4700F608	470 1/6W 5 TA26
		R480	ORD4702F608	47K 1/6W 5 TA26
		R482	ORD4702F608	47K 1/6W 5 TA26
		R484	ORD3902F608	39K 1/6W 5 TA26
		R485	ORD5601F608	5.6K 1/6W 5 TA26
		R486	ORD3902F608	39K 1/6W 5 TA26
		R487	ORD2201F608	2.2K 1/6W 5 TA26
		R488	ORD1001F608	1.0K 1/6W 5 TA26
		R489	ORD1001F608	1.0K 1/6W 5 TA26
		R490	ORD1001F608	1.0K 1/6W 5 TA26
		R491	ORD1001F608	1.0K 1/6W 5 TA26
		R492	ORD1001F608	1.0K 1/6W 5 TA26
		R494	ORD5602F608	56K 1/6W 5 TA26
		R495	ORD2201F608	2.2K 1/6W 5 TA26
		R496	ORD1001F608	1.0K 1/6W 5 TA26
		R497	ORD5602F608	56K 1/6W 5 TA26
		R498	ORD2701F608	2.7K 1/6W 5 TA26
		R499	ORD1002F608	10K 1/6W 5 TA26
		R4A0	ORD1802F608	18K 1/6W 5 TA26
		R4A1	ORD3302F608	33K 1/6W 5 TA26
		R4A2	ORD4700F608	470 1/6W 5 TA26
		R4A3	ORD8200F608	820 1/6W 5 TA26
		R4A4	ORD1001F608	1.0K 1/6W 5 TA26
		R4A5	ORD1001F608	1.0K 1/6W 5 TA26
		R4A6	ORD4701F608	4.7K 1/6W 5 TA26
		R4A7	ORD1001F608	1.0K 1/6W 5 TA26
		R4A8	ORD4702F608	47K 1/6W 5 TA26
		R4A9	ORD1002F608	10K 1/6W 5 TA26
		R4B0	ORD1501F608	1.5K 1/6W 5 TA26
		R4B1	ORD1801F608	1.8K 1/6W 5 TA26
		R4B2	ORD2201F608	2.2K 1/6W 5 TA26
		R4B3	ORD6800F608	680 1/6W 5 TA26
		R4B4	ORD4701F608	4.7K 1/6W 5 TA26
		R4B5	ORD4701F608	4.7K 1/6W 5 TA26
		R4B6	ORD6800F608	680 1/6W 5 TA26
		R4B7	ORD2201F608	2.2K 1/6W 5 TA26
		R4B8	ORD1501F608	1.5K 1/6W 5 TA26
		R4B9	ORD1801F608	1.8K 1/6W 5 TA26
		R4C0	ORD1002F608	10K 1/6W 5 TA26
		R4C1	ORD4702F608	47K 1/6W 5 TA26
		R4C3	ORD1001F608	1.0K 1/6W 5 TA26
		R4C4	ORD1001F608	1.0K 1/6W 5 TA26
		R4C5	ORD3302F608	33K 1/6W 5 TA26
		R4C6	ORD1503F608	150K 1/6W 5 TA26
		R4C7	ORD1503F608	150K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R4C8	ORD2203F608	220K 1/6W 5 TA26
		R4C9	ORD2203F608	220K 1/6W 5 TA26
		R501	ORD4701F608	4.7K 1/6W 5 TA26
		R502	ORD1503F608	150K 1/6W 5 TA26
		R503	ORD1503F608	150K 1/6W 5 TA26
		R504	ORD1002F608	10K 1/6W 5 TA26
		R505	ORD1002F608	10K 1/6W 5 TA26
		R506	ORD1003F608	100K 1/6W 5 TA26
		R507	ORD1003F608	100K 1/6W 5 TA26
		R508	ORD1003F608	100K 1/6W 5 TA26
		R509	ORD1003F608	100K 1/6W 5 TA26
		R510	ORD1003F608	100K 1/6W 5 TA26
		R511	ORD1003F608	100K 1/6W 5 TA26
		R512	ORD1003F608	100K 1/6W 5 TA26
		R513	ORD2201F608	2.2K 1/6W 5 TA26
		R514	ORD2201F608	2.2K 1/6W 5 TA26
		R515	ORD1003F608	100K 1/6W 5 TA26
		R516	ORD1003F608	100K 1/6W 5 TA26
		R517	ORD1003F608	100K 1/6W 5 TA26
		R518	ORD1003F608	100K 1/6W 5 TA26
		R519	ORD1003F608	100K 1/6W 5 TA26
		R520	ORD1003F608	100K 1/6W 5 TA26
		R521	ORD1800F608	180 1/6W 5 TA26
		R522	ORD1800F608	180 1/6W 5 TA26
		R523	ORD4702F608	47K 1/6W 5 TA26
		R524	ORD4701F608	4.7K 1/6W 5 TA26
		R525	ORD4701F608	4.7K 1/6W 5 TA26
		R526	ORD1002F608	10K 1/6W 5 TA26
		R527	ORD4701F608	4.7K 1/6W 5 TA26
		R528	ORD4701F608	4.7K 1/6W 5 TA26
		R529	ORD1002F608	10K 1/6W 5 TA26
		R530	ORD1002F608	10K 1/6W 5 TA26
		R531	ORD1802F608	18K 1/6W 5 TA26
		R532	ORD1802F608	18K 1/6W 5 TA26
		R533	ORD8203F608	820K 1/6W 5 TA26
		R534	ORD8203F608	820K 1/6W 5 TA26
		R535	ORD4701F608	4.7K 1/6W 5 TA26
		R536	ORD4702F608	47K 1/6W 5 TA26
		R537	ORD1004F608	1.0M 1/6W 5 TA26
		R538	ORD1204F608	1.2M 1/6W 5 TA26
		R539	ORD1501F608	1.5K 1/6W 5 TA26
		R541	ORD0221F608	2.2 1/6W 5 TA26
		R542	ORD0221F608	2.2 1/6W 5 TA26
		R543	ORD0221F608	2.2 1/6W 5 TA26
		R544	ORD1003F608	100K 1/6W 5 TA26
		R545	ORD5601F608	5.6K 1/6W 5 TA26
		R546	ORD6800F608	680 1/6W 5 TA26
		R547	ORD1002F608	10K 1/6W 5 TA26
		R548	ORD1002F608	10K 1/6W 5 TA26
		R549	ORD4700F608	470 1/6W 5 TA26
		R550	ORD1002F608	10K 1/6W 5 TA26
		R551	ORD1002F608	10K 1/6W 5 TA26
		R552	ORD1002F608	10K 1/6W 5 TA26
		R553	ORD2201F608	2.2K 1/6W 5 TA26
		R554	ORD3301F608	3.3K 1/6W 5 TA26
		R555	ORD4701F608	4.7K 1/6W 5 TA26
		R556	ORD2202F608	22K 1/6W 5 TA26
		R557	ORD0101F608	1.0 1/6W 5 TA26
		R558	ORD0101F608	1.0 1/6W 5 TA26
		R559	ORD0101F608	1.0 1/6W 5 TA26
		R560	ORD0101F608	1.0 1/6W 5 TA26
		R561	ORD1002F608	10K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R562	ORD3300F608	330 1/6W 5 TA26
		R563	ORD1002F608	10K 1/6W 5 TA26
		R564	ORD1002F608	10K 1/6W 5 TA26
		R565	ORD2701F608	2.7K 1/6W 5 TA26
		R566	ORD1003F608	100K 1/6W 5 TA26
		R567	ORD1002F608	10K 1/6W 5 TA26
		R568	ORD1002F608	10K 1/6W 5 TA26
		R569	ORD1002F608	10K 1/6W 5 TA26
		R570	ORD4700F608	470 1/6W 5 TA26
		R571	ORD1002F608	10K 1/6W 5 TA26
		R572	ORD1002F608	10K 1/6W 5 TA26
		R573	ORD1002F608	10K 1/6W 5 TA26
		R574	ORD2702F608	27K 1/6W 5 TA26
		R575	ORD2702F608	27K 1/6W 5 TA26
		R576	ORD2702F608	27K 1/6W 5 TA26
		R577	ORD3302F608	33K 1/6W 5 TA26
		R578	ORD2202F608	22K 1/6W 5 TA26
		R579	ORD6800F608	680 1/6W 5 TA26
		R580	ORD1001F608	1.0K 1/6W 5 TA26
		R581	ORD3900F608	390 1/6W 5 TA26
		R582	ORD1004F608	1.0M 1/6W 5 TA26
		R583	ORD4701F608	4.7K 1/6W 5 TA26
		R584	ORD4701F608	4.7K 1/6W 5 TA26
		R585	ORD4701F608	4.7K 1/6W 5 TA26
		R586	ORD4701F608	4.7K 1/6W 5 TA26
		R587	ORD4701F608	4.7K 1/6W 5 TA26
		R588	ORD3301F608	3.3K 1/6W 5 TA26
		R589	ORD1202F608	12K 1/6W 5 TA26
		R590	ORD2202F608	22K 1/6W 5 TA26
		R591	ORD1003F608	100K 1/6W 5 TA26
		R592	ORD1001F608	1.0K 1/6W 5 TA26
		R593	ORD0562F608	56 1/6W 5 TA26
		R594	ORD1001F608	1.0K 1/6W 5 TA26
		R595	ORD4701F608	4.7K 1/6W 5 TA26
		R596	ORD2202F608	22K 1/6W 5 TA26
		R597	ORD2202F608	22K 1/6W 5 TA26
		R598	ORD2201F608	2.2K 1/6W 5 TA26
		R599	ORD4703F608	470K 1/6W 5 TA26
		R5A1	ORD8203F608	820K 1/6W 5 TA26
		R5A2	ORD6803F608	680K 1/6W 5 TA26
		R5A3	ORD1800F608	180 1/6W 5 TA26
		R5A4	ORD1002F608	10K 1/6W 5 TA26
		R5A5	ORD1002F608	10K 1/6W 5 TA26
		R5A6	ORD4701F608	4.7K 1/6W 5 TA26
		R5A7	ORD4701F608	4.7K 1/6W 5 TA26
		R5A8	ORD4701F608	4.7K 1/6W 5 TA26
		R5A9	ORD4701F608	4.7K 1/6W 5 TA26
		R601	ORD3300F608	330 1/6W 5 TA26
		R602	ORD3900F608	390 1/6W 5 TA26
		R603	ORD4700F608	470 1/6W 5 TA26
		R604	ORD6800F608	680 1/6W 5 TA26
		R605	ORD1001F608	1.0K 1/6W 5 TA26
		R606	ORD1501F608	1.5K 1/6W 5 TA26
		R607	ORD4701F608	4.7K 1/6W 5 TA26
		R608	ORD4701F608	4.7K 1/6W 5 TA26
		R609	ORD4701F608	4.7K 1/6W 5 TA26
		R610	ORD3302F608	33K 1/6W 5 TA26
		R611	ORD1200F608	120 1/6W 5 TA26
		R612	ORD4700F608	470 1/6W 5 TA26
		R613	ORD5600F608	560 1/6W 5 TA26
		R614	ORD5600F608	560 1/6W 5 TA26
		R615	ORD0471F608	4.7 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R616	ORD2203F608	220K 1/6W 5 TA26
		R617	ORD2203F608	220K 1/6W 5 TA26
		R618	ORD2203F608	220K 1/6W 5 TA26
		R619	ORD1501F608	1.5K 1/6W 5 TA26
		R620	ORD8202F608	82K 1/6W 5 TA26
		R621	ORD2203F608	220K 1/6W 5 TA26
		R623	ORD8202F608	82K 1/6W 5 TA26
		R627	ORD3902F608	39K 1/6W 5 TA26
		R628	ORD1203F608	120K 1/6W 5 TA26
		R629	ORD1203F608	120K 1/6W 5 TA26
		R630	ORD3902F608	39K 1/6W 5 TA26
		R631	ORD8200F608	820 1/6W 5 TA26
		R632	ORD8200F608	820 1/6W 5 TA26
		R635	ORD1501F608	1.5K 1/6W 5 TA26
		R636	ORD1001F608	1.0K 1/6W 5 TA26
		R637	ORD1002F608	10K 1/6W 5 TA26
		R6A0	ORD2200F608	220 1/6W 5 TA26
		R6A1	ORD3300F608	330 1/6W 5 TA26
		R6A2	ORD3900F608	390 1/6W 5 TA26
		R6A3	ORD4700F608	470 1/6W 5 TA26
		R6A4	ORD6800F608	680 1/6W 5 TA26
		R6A5	ORD1001F608	1.0K 1/6W 5 TA26
		R6A6	ORD1501F608	1.5K 1/6W 5 TA26
		R6A7	ORD2201F608	2.2K 1/6W 5 TA26
		R6A8	ORD3301F608	3.3K 1/6W 5 TA26
		R6A9	ORD5601F608	5.6K 1/6W 5 TA26
		R6B1	ORD1201F608	1.2K 1/6W 5 TA26
		R701	ORD1000F608	100 1/6W 5 TA26
		R702	ORD4701F608	4.7K 1/6W 5 TA26
		R703	ORD1001F608	1.0K 1/6W 5 TA26
		R704	ORD1001F608	1.0K 1/6W 5 TA26
		R705	ORD1000F608	100 1/6W 5 TA26
		R706	ORD2701F608	2.7K 1/6W 5 TA26
		R707	ORD1001F608	1.0K 1/6W 5 TA26
		R708	ORD2700F608	270 1/6W 5 TA26
		R710	ORD1802F608	18K 1/6W 5 TA26
		R711	ORD1002F608	10K 1/6W 5 TA26
		R712	ORD1001F608	1.0K 1/6W 5 TA26
		R714	ORD2700F608	270 1/6W 5 TA26
		R715	ORD3300F608	330 1/6W 5 TA26
		R716	ORD1001F608	1.0K 1/6W 5 TA26
		R717	ORD2200F608	220 1/6W 5 TA26
		R729	ORD2201F608	2.2K 1/6W 5 TA26
		R730	ORD2201F608	2.2K 1/6W 5 TA26
		R731	ORD1000F608	100 1/6W 5 TA26
		R732	ORD5601F608	5.6K 1/6W 5 TA26
		R733	ORD1001F608	1.0K 1/6W 5 TA26
		R734	ORD1000F608	100 1/6W 5 TA26
		R735	ORD5601F608	5.6K 1/6W 5 TA26
		R736	ORD1001F608	1.0K 1/6W 5 TA26
		R737	ORD4700F608	470 1/6W 5 TA26
		R738	ORD2701F608	2.7K 1/6W 5 TA26
		R739	ORD1001F608	1.0K 1/6W 5 TA26
		R744	ORD2702F608	27K 1/6W 5 TA26
		R745	ORD1802F608	18K 1/6W 5 TA26
		R746	ORD1001F608	1.0K 1/6W 5 TA26
		R747	ORD1001F608	1.0K 1/6W 5 TA26
		R801	ORD1203F608	120K 1/6W 5 TA26
		R802	ORD5601F608	5.6K 1/6W 5 TA26
		R803	ORD8201F608	8.2K 1/6W 5 TA26
		R804	ORD3902F608	39K 1/6W 5 TA26
		R805	ORD1002F608	10K 1/6W 5 TA26



S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R806	ORD1202F608	12K 1/6W 5 TA26
		R807	ORD8201F608	8.2K 1/6W 5 TA26
		R808	ORD2201F608	2.2K 1/6W 5 TA26
		R809	ORD1001F608	1.0K 1/6W 5 TA26
		R810	ORD1001F608	1.0K 1/6W 5 TA26
		R811	ORD2200F608	220 1/6W 5 TA26
		R812	ORD4700F608	470 1/6W 5 TA26
		R813	ORD1001F608	1.0K 1/6W 5 TA26
		R814	ORD3302F608	33K 1/6W 5 TA26
		R815	ORD1002F608	10K 1/6W 5 TA26
		R816	ORD4701F608	4.7K 1/6W 5 TA26
		R817	ORD4701F608	4.7K 1/6W 5 TA26
		R818	ORD1003F608	100K 1/6W 5 TA26
		R819	ORD6803F608	680K 1/6W 5 TA26
		R820	ORD1002F608	10K 1/6W 5 TA26
		R821	ORD3900F608	390 1/6W 5 TA26
		R822	ORD1001F608	1.0K 1/6W 5 TA26
		R823	ORD1001F608	1.0K 1/6W 5 TA26
		R824	ORD1001F608	1.0K 1/6W 5 TA26
		R825	ORD4701F608	4.7K 1/6W 5 TA26
		R826	ORD4701F608	4.7K 1/6W 5 TA26
		R831	ORD4703F608	470K 1/6W 5 TA26
		R832	ORD6802F608	68K 1/6W 5 TA26
		R833	ORD4700F608	470 1/6W 5 TA26
		R834	ORD2203F608	220K 1/6W 5 TA26
		R835	ORD3302F608	33K 1/6W 5 TA26
		R836	ORD1001F608	1.0K 1/6W 5 TA26
		R837	ORD4701F608	4.7K 1/6W 5 TA26
		R838	ORD2203F608	220K 1/6W 5 TA26
		R839	ORD2702F608	27K 1/6W 5 TA26
		R840	ORD0752F608	75 1/6W 5 TA26
		R841	ORD0752F608	75 1/6W 5 TA26
		R842	ORD0752F608	75 1/6W 5 TA26
		R843	ORD1001F608	1.0K 1/6W 5 TA26
		R844	ORD1001F608	1.0K 1/6W 5 TA26
		R847	ORD0752F608	75 1/6W 5 TA26
		R848	ORD1001F608	1.0K 1/6W 5 TA26
		R849	ORD1001F608	1.0K 1/6W 5 TA26
		R850	ORD0682F608	68 1/6W 5 TA26
		R851	ORD0752F608	75 1/6W 5 TA26
		R852	ORD1001F608	1.0K 1/6W 5 TA26
		R857	ORD8202F608	82K 1/6W 5 TA26
		R858	ORD8202F608	82K 1/6W 5 TA26
		R859	ORD6802F608	68K 1/6W 5 TA26
		R860	ORD6802F608	68K 1/6W 5 TA26
		R861	ORD5602F608	56K 1/6W 5 TA26
		R862	ORD5602F608	56K 1/6W 5 TA26
		R863	ORD8202F608	82K 1/6W 5 TA26
		R865	ORD8202F608	82K 1/6W 5 TA26
		R867	ORD1203F608	120K 1/6W 5 TA26
		R868	ORD8202F608	82K 1/6W 5 TA26
		R869	ORD5602F608	56K 1/6W 5 TA26
		R870	ORD6802F608	68K 1/6W 5 TA26
		R871	ORD6802F608	68K 1/6W 5 TA26
		R872	ORD5602F608	56K 1/6W 5 TA26
		R873	ORD8202F608	82K 1/6W 5 TA26
		R874	ORD1203F608	120K 1/6W 5 TA26
		R879	ORD3300F608	330 1/6W 5 TA26
		R891	ORD1003F608	100K 1/6W 5 TA26
		R892	ORD0752F608	75 1/6W 5 TA26
		R893	ORD0752F608	75 1/6W 5 TA26
		R894	ORD6800F608	680 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R901	ORH8201D622	8.2K 1/10W 5 D.R/TP
		R902	ORH1000D622	100 1/10W 5 D.R/TP
		R903	ORH8200D622	820 1/10W 5 D.R/TP
		R904	ORH4702D622	47K 1/10W 5 D.R/TP
		R905	ORH1200D622	120 1/10W 5 D.R/TP
		R906	ORH5602D622	56K 1/10W 5 D.R/TP
		R907	ORH3903D622	390K 1/10W 5 D.R/TP
		R908	ORH4703D622	470K 1/10W 5 D.R/TP
		R909	ORH5601D622	5.6K 1/10W 5 D.R/TP
		R910	ORD0752F608	75 1/6W 5 TA26
		R911	ORH0752D622	75 1/10W 5 D.R/TP
		R912	ORH0752D622	75 1/10W 5 D.R/TP
		R913	ORH0752D622	75 1/10W 5 D.R/TP
		R914	ORH1002D622	10K 1/10W 5 D.R/TP
		R915	ORH4701D622	4.7K 1/10W 5 D.R/TP
		R916	ORH0102D622	10 1/10W 5 D.R/TP
		R917	ORH1001D622	1.0K 1/10W 5 D.R/TP
		R918	ORH1001D622	1.0K 1/10W 5 D.R/TP
		R919	ORH5600D622	560 1/10W 5 D.R/TP
		R921	ORH1001D622	1.0K 1/10W 5 D.R/TP
		R922	ORH1202D622	12K 1/10W 5 D.R/TP
		R923	ORH1802D622	18K 1/10W 5 D.R/TP
		R924	ORH3901D622	3.9K 1/10W 5 D.R/TP
		R926	ORD1001F608	1.0K 1/6W 5 TA26
		R930	ORH5600D622	560 1/10W 5 D.R/TP
		R950	ORH1002D622	10K 1/10W 5 D.R/TP
		R951	ORH1002D622	10K 1/10W 5 D.R/TP
		RP01	614-007A	2.7/2W CEMENT SMPS V
		RP02	ORD1503H600	150K 1/2W 5 A
		RP03	ORD1001F608	1.0K 1/6W 5 TA26
		RP04	ORS0562J600	56 1W 5 A
		RP05	ORD0221F608	2.2 1/6W 5 TA26
		RP06	ORW0101K600	1 2W 5% A
		RP07	ORD1201F608	1.2K 1/6W 5 TA26
		RP08	ORD2701F608	2.7K 1/6W 5 TA26
		RP09	ORN4701F408	4.7K 1/6W 1 TA26
		RP10	ORD4701F608	4.7K 1/6W 5 TA26
		RP13	ORD3900F608	390 1/6W 5 TA26
		RP14	ORD1000F608	100 1/6W 5 TA26
		RP15	ORD2203F608	220K 1/6W 5 TA26
		RP16	ORD1003F608	100K 1/6W 5 TA26
		RP21	ORN3001F408	3.0K 1/6W 1 TA26
		W014	ORD1500F608	150 1/6W 5 TA26
		W950	ORH0000D622	0 1/10W 5 D.R/TP
		W951	ORH0000D622	0 1/10W 5 D.R/TP
		W952	ORH0000D622	0 1/10W 5 D.R/TP
		W953	ORH0000D622	0 1/10W 5 D.R/TP
		W954	ORH0000D622	0 1/10W 5 D.R/TP
		W955	ORH0000D622	0 1/10W 5 D.R/TP
		W956	ORH0000D622	0 1/10W 5 D.R/TP
<b>REMOCON RECEIVER</b>				
		RC601	668-227C	RECE 15.0 3276A 2800 KOTEC
<b>SCART</b>				
		JK801	573-006C	RGB SOKET SR-21S3 21PIN (BK)
		JK802	573-006D	RGB (BLUE)
<b>SWITCH</b>				
		SW601	556-219A	SKHV10910A (GS ALPS)



S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		SW602	556-219A	SKHV10910A (GS ALPS)
		SW603	556-219A	SKHV10910A (GS ALPS)
		SW604	556-219A	SKHV10910A (GS ALPS)
		SW605	556-219A	SKHV10910A (GS ALPS)
		SW606	556-219A	SKHV10910A (GS ALPS)
		SW607	556-219A	SKHV10910A (GS ALPS)
		SW6A0	556-219A	SKHV10910A (GS ALPS)
		SW6A1	556-219A	SKHV10910A (GS ALPS)
		SW6A2	556-219A	SKHV10910A (GS ALPS)
		SW6A3	556-219A	SKHV10910A (GS ALPS)
		SW6A4	556-219A	SKHV10910A (GS ALPS)
		SW6A5	556-219A	SKHV10910A (GS ALPS)
		SW6A6	556-219A	SKHV10910A (GS ALPS)
		SW6A7	556-219A	SKHV10910A (GS ALPS)
		SW6A9	556-219A	SKHV10910A (GS ALPS)
<b>TUNER</b>				
		TU701	521-412A	TUGG9-A01F G/ALPS FS 470 FTZ
<b>VARIABLE RESISTOR</b>				
		VR201	613-032U	RH0638C15R0WA (100K)
		VR202	613-032U	RH0638C15R0WA (100K)
		VR3A0	613-032U	RH0638C15R0WA (100K)
		VR401	613-032Q	RH0638CJ4R0WA (22K)
		VR402	613-032Q	RH0638CJ4R0WA (22K)
		VR403	613-032U	RH0638C15R0WA (100K)
		VR4A0	613-032Q	RH0638CJ4R0WA (22K)
		VR4A1	613-032S	RH0638CS4R0VA (47K)
		VR4A2	613-032S	RH0638CS4R0VA (47K)
		VR4A3	613-032S	RH0638CS4R0VA (47K)
		VR4A4	613-032Q	RH0638CJ4R0WA (22K)
		VR601	611-012I	RK09K117000324B
		VR602	611-012I	RK09K117000324B
		VR701	613-032Q	RH0638CJ4R0WA (22K)
<b>CRYSTAL</b>				
		X202	529-001K	32.768KHZ 3*8 SEIKO (20PPM)
		X301	529-029K	4.433619MHZ 15PPM HC-49/U KSS
		X3A0	529-022F	4.433619M 30PPM CL=16P DL=1M
		X501	529-020R	12.000000MHZ 30PPM NO-TU L=4.0
		X502	529-022E	11.71875 30PPM CL=10P DL=1M
		X701	529-021Q	18.432MHZ DBS KUKJAE
		X801	529-019A	CSB500F-9 MURATA
		X8A1	529-022V	17.734476MHZ CL-12P 25PPM LEAD
<b>RESONATOR</b>				
		X201	618-017A	FCR6.0MCT2 TDK-J(TAPING)
<b>ZENER DIODE</b>				
		ZD201	0DZ820009AA	MTZ8.2B TP ROHM-K
		ZD202	0DZ620009AA	MTZ6.2B (TA)
		ZD203	0DZ620009AA	MTZ6.2B (TA)
		ZD205	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD301	0DZ620009AA	MTZ6.2B (TA)
		ZD302	0DZ620009AA	MTZ6.2B (TA)
		ZD304	0DZ100009AA	MTZ10B MINI TP ROHM-K
		ZD401	0DZ100009AA	MTZ10B MINI TP ROHM-K
		ZD402	0DZ100009AA	MTZ10B MINI TP ROHM-K
		ZD403	0DZ100009AA	MTZ10B MINI TP ROHM-K

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		ZD501	0DZ620009AA	MTZ6.2B (TA)
		ZD601	0DZ160009BA	MTZ16B TP ROHM-K
		ZD602	0DZ160009BA	MTZ16B TP ROHM-K
		ZD701	0DZ100009AA	MTZ10B MINI TP ROHM-K
		ZD801	0DZ160009BA	MTZ16B TP ROHM-K
		ZD802	0DZ160009BA	MTZ16B TP ROHM-K
		ZD803	0DZ160009BA	MTZ16B TP ROHM-K
		ZD804	0DZ160009BA	MTZ16B TP ROHM-K
		ZD805	0DZ160009BA	MTZ16B TP ROHM-K
		ZD806	0DZ160009BA	MTZ16B TP ROHM-K
		ZD807	0DZ160009BA	MTZ16B TP ROHM-K
		ZD808	0DZ160009BA	MTZ16B TP ROHM-K
		ZD809	0DZ160009BA	MTZ16B TP ROHM-K
		ZD810	0DZ160009BA	MTZ16B TP ROHM-K
		ZD811	0DZ160009BA	MTZ16B TP ROHM-K
		ZD812	0DZ160009BA	MTZ16B TP ROHM-K
		ZD813	0DZ160009BA	MTZ16B TP ROHM-K
		ZD814	0DZ160009BA	MTZ16B TP ROHM-K
		ZD815	0DZ160009BA	MTZ16B TP ROHM-K
		ZD816	0DZ160009BA	MTZ16B TP ROHM-K
		ZD817	0DZ160009BA	MTZ16B TP ROHM-K
		ZD818	0DZ160009BA	MTZ16B TP ROHM-K
		ZD819	0DZ160009BA	MTZ16B TP ROHM-K
		ZD820	0DZ160009BA	MTZ16B TP ROHM-K
		ZD821	0DZ160009BA	MTZ16B TP ROHM-K
		ZD822	0DZ160009BA	MTZ16B TP ROHM-K
		ZD823	0DZ160009BA	MTZ16B TP ROHM-K
		ZD824	0DZ160009BA	MTZ16B TP ROHM-K
		ZD825	0DZ160009BA	MTZ16B TP ROHM-K
		ZD826	0DZ160009BA	MTZ16B TP ROHM-K
		ZD827	0DZ160009BA	MTZ16B TP ROHM-K
		ZD828	0DZ160009BA	MTZ16B TP ROHM-K
		ZD829	0DZ160009BA	MTZ16B TP ROHM-K
		ZD830	0DZ160009BA	MTZ16B TP ROHM-K
		ZD831	0DZ160009BA	MTZ16B TP ROHM-K
		ZD832	0DZ160009BA	MTZ16B TP ROHM-K
		ZD833	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD834	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZDP01	0DZ330009AF	MTZ33B,TP,ROHM-K
		ZDP02	0DZ560009CA	MTZ5.6B TP ROHM-K